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AMIGA COMPUTING



AMIGATOUR
Into the spotlight comes Denise – star of the silver screen

AMIGATEXT
Writing in style made easy with Reason

AMIGAWORDS
K-Roget: Can it find that elusive synonym?

AMIGAGAMES
- Vixen
- Capone
- Ganymed
- Bomb Busters
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Goals galore!

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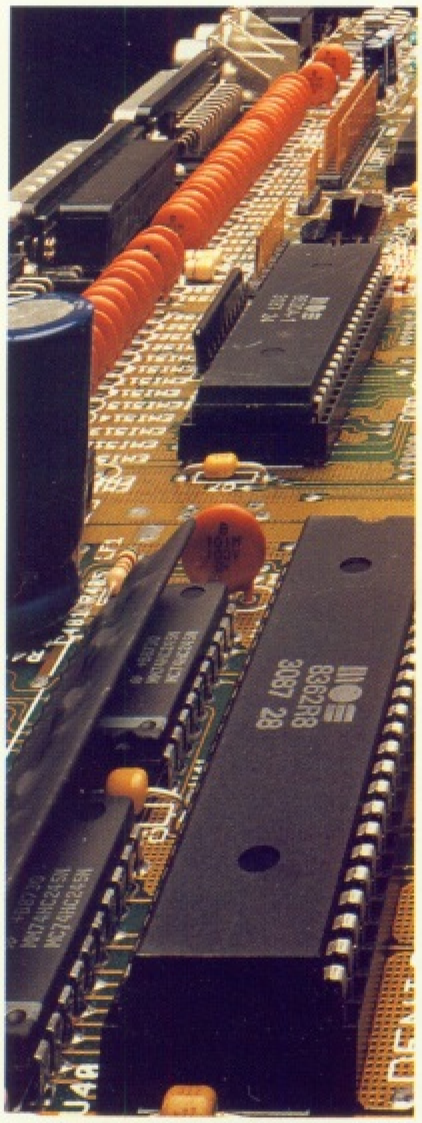
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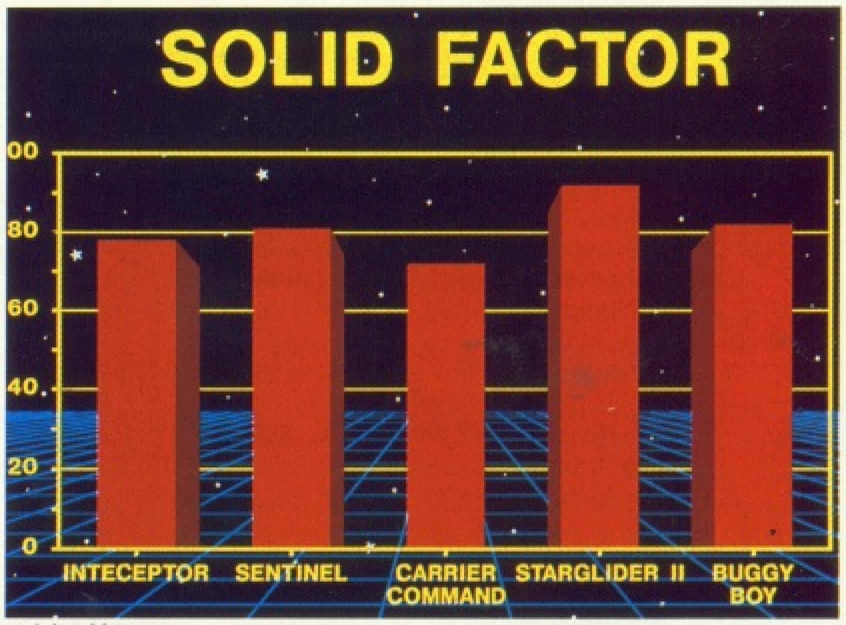
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AMIGA SCENE

Sales to schools are soaring

A GREAT Amiga breakthrough into the education sector is underway. Half way through its Education Initiative 88 project, Commodore says Amiga sales to local education authorities are skyrocketing.

Among those LEAs which have already bought the machine in significant quantities are Somerset – where there is now an Amiga in every secondary school – Yorkshire, Northumberland, Dorset, Sussex and Wiltshire.

Commodore education sales manager Peter Talbot told *Amiga Computing*: "Our decision in April to strongly promote the Amiga into the education sector is paying off splendidly.

"Our policy is to recruit specialist education sector dealers, offer special pricing through these dealers and aggressively encourage the development of educational software for the Amiga.

"The days of the Acorn-RML monopoly are over and it is important that the Amiga is perceived as being among the new generation of school computers.

"I consider the Amiga is now in the top four or five machines for schools. Acorn dealers are coming over to us in large numbers, and the amount of education software available is growing by leaps and bounds".

Talbot is particularly heartened by the fact that the Amiga has been chosen for nine of 17 training courses for advisory teachers organised by the Microelectronics Education Support Unit.

And the Amiga is one of five non-PC machines currently being assessed by the National Council for Education Technology, which is due to make its recommendations at the end of the year.

"A major part of our strength is our realistic approach", said Peter Talbot. "We have decided to accept the existing standard and develop from it. We are offering MSdos compatibility and, by the end of the year we will have BBC Basic emulation as well.

"This won't enhance the Amiga, but we have to face the fact that schools are not going to junk their old hardware and software.

"Being very well established in Germany and France, as well as here, we have a European attitude toward software development, encouraging and promoting packages that are content-free with optional language menus.

"We've always been strong on the arts side, now we're seeing general secondary school courseware coming through.

"Lack of software is no longer a viable criticism of the Amiga – at the end of last year we had 700 packages, today we have more than 2,000. And don't forget that the Amiga 2000 has the PC option".



Palace Software will soon be releasing its Shoot-Em-Up Construction Kit for the Amiga

Impressive at Festival

PROVING that you don't need to spend a fortune to make the most of an Amiga, Mark Wirt won Amiga Centre Scotland's recent animation competition.

He used an A500 with a second drive, a megabyte of memory and a copy of Sculpt Animate, no hard disc, no fancy processors or custom software.

The result? A laughing green head and his name in tumbling letters, which impressed the judges enough for him to be awarded a host of prizes from Commodore and the Amiga Centre Scotland. The runners up, Lampo and Sid's Dream, seemed to owe something to the famous Pixar demos Luxor Jr and Red's Dream if only for inspiration.

Unlike previous Commodore graphic competitions the show at the Edinburgh Fringe Festival concentrated on the Amiga and animation.

The last Commodore graphics award was held in 1984 with much razzmatazz at the launch in a swish West End night club but failed to live up to early promise.

But that was on a Commodore 64: The superior graphics of the Amiga and the high standards of entries from around the world augur well for next years Edinburgh festival.

Commodore profits leap

A BIG increase in Commodore's profits – due largely to booming sales of the Amiga – has been announced.

Net income for the fourth quarter was $12.2 million, compared with $2.1 million in the same period last year.

This was on sales totalling $215.2 million compared to $190.4 million for last year's fourth quarter.

Total profits for the current year were boosted to $55.8 million on sales of $871.1 million – up from $28.6 million and $806.7 million the previous year.

Commodore chairman Irving Gould said: "Increased profitability in the final quarter was due to sales growth in all our major markets".

A Plague of colours

THE world's first game in 4,000 colour mode has arrived – and it's exclusive to the Amiga. Pioneer Plague is the only entertainment package developed to take advantage of the Commodore Amiga's Hold and Modify (HAM) graphics facility.

HAM allows up to 4,096 colours to be displayed on screen at one time. But because it uses up so much processor time it had never before been successfully incorporated in a game.

The unique title is a joint venture between US based Terrific Software – a division of Antic – and leading UK software house Mandarin.

Featuring eight way scrolling, digitised speech and a variety of original music scores in stereo, the price tag is £19.95.

Course for Clint fans

TO follow up its current hit title Bomb Disposal, Classic Software (0983 864674) has announced Marksman – a game that takes the player through a full handgun training course.

The program starts with a .22 target pistol and proceeds to automatic weapons. Price £19.99.

TOP GAMES COMING THE AMIGA'S WAY

THIS could be the last year that the Amiga has to lower itself to accommodate an inferior ST game that squeezed inside purely for the company's convenience.

Ocean's software manager, Gary Bracey, has told *Amiga Computing* of two major licences, **Rambo III** and **Daley Thompson 88**.

Peter Johnson is the man responsible for Ocean's third game featuring Daley Thompson, and it's also hoped that the Amiga version will include digitised graphics, superior sound and better graphic animation than any of the other home computer versions.

Ocean, not content with its coup will also have news of **Combat School, Gryzor, Where Time Stood Still, Robocop, Victory Road, Jackal, Operation Wolf** and **Vidicator** nearer Christmas.

Another company looking to the Amiga to lead the way in the coin-op stakes and film licences will be US Gold, which should be releasing the Capcom trio of **1943, Black Tiger** and **Sidearms** as well as **Advanced Dungeons and Dragons** and **California Games**.

Advanced Dungeons and Dragons promises to set the roleplaying fraternity on fire when it is eventually released. The news is that the licence will also sport an arcade game.

Gremlin, which has always shared a close software relationship with US Gold, has made a very slow start to the Amiga market, having only released the Magic Byte titles of **Pink Panther** and **Vampire's Empire**.

But the company is set to make a big impact with a host of new games, many of which will be based on major licences. **Mickey Mouse** is being completed at this very moment and I'm informed that the Amiga version should be ready soon. Another game that should be released for the Amiga shortly will be a brand new 16 bit only game called **SOFT** – Gremlin's first venture into the solid 3D market. The game is set in a surreal world and features elements of exploration and fast shoot em'up action.

Also on the agenda for Gremlin are **Deflector** and **Night Raider**. Deflector is a conversion of the popular 8 bit and ST arcade puzzle game while **Night Raider** is a flight combat simulator programmed by Sydney Developments in Canada.

Gary Lineker's **Hotshot Football** is yet another game to be programmed across the Atlantic, this time by Mindscape, to be released "real soon now".

Elite has made quite a name for itself with Amiga gamesters over the past few months with some very playable games, notably **Thundercats** and **Buggy Boy**. Arcade conversions will also play a very influential part in future plans.

Meanwhile, look out for the Amiga version of the brilliant Overlander, progressive road race and action games that feature extra weapons.

Mirrorsoft, who took the world by storm a few years ago with **Defender of the Crown**, will be looking for its Cinemaware range – **Rocket Ranger, It Came from the Desert** and **Lords of the Rising Sun** – to leave jaws gaping.

Activision should win an award for the most boring software release. Photon Paint Expansion discs. £20 buys you two discs of digitised driftwood and bits of marble. Only Photon Paint's brilliance makes them worth anything.

Finally, some quite unusual programmer news. Its recently reached my always alert attention that Tynesoft's Amiga version of Superman is being programmed and developed in America by a software development team headed by two men who were originally associated with DC comics.

Chris Holmes

Move around in 3D

FROM Incentive Software (07356 77288) comes Driller, an adventure game which uses the solid 3D environment simulator Freescape.

"This allows the user to move to any point in three dimensional space, look in any direction and see the view as if actually there" said Incentive spokesman Ian Andrews.

"Due to advanced compression techniques, Driller is also massive – with 18 major sections plus additional sections within tunnels and buildings.

"Over two billion screens are possible from each section". Price £24.95.

BBC emulator due soon

THE most popular version of Basic for use in schools is BBC Basic, thanks to Acorn's strong foothold in the educational market.

In a bid to exploit the market potential within schools and colleges many computer manufacturers – notably IBM and Cambridge Computer with its Z88 – offer BBC Basic for their machines.

Commodore has gone one better and commissioned an Amiga program which will emulate an entire BBC Model B micro along with all its graphics, operating and disc filing system commands.

This ambitious task is being undertaken by Ariadne software, which hopes to improve on the version 1 release with a BBC Master emulator if the original proves successful.

Wider range of joysticks

TWO new Amiga joysticks are to be launched by Konix (0273 561306). Predator will probably sell for just under £13 and Megablaster for about £8, Konix director Sandra Holloway told *Amiga Computing*.

Although similar in appearance, the joysticks will be different internally. Predator is operated by microswitches while Megablaster uses a more traditional mechanism.

Sandra Holloway said: "With the hand-held Speed



King – which has sold nearly three million units – and the two new desktop joysticks we will have a more diverse range than any of our rivals".

It's show time again

WITH Amiga addicts still recovering from the PC Show or starting to think about the Commodore Christmas Show in November, October outdoes the other winter months with two shows.

The International Desktop Publishing Show at the super smart Business Design Centre, Islington will be a mecca for those who know their PostScript from their picas, while over at the Wembley Conference Centre there will be computer graphics to make your brain explode.

Commodore will be there to show the computer graphics community that high quality displays needn't cost a fortune. Computer Graphics 88 runs from October 11 to 13. For more details call 01-868 4466. The DeskTop Publishing Show just overlaps, running from October 13 to 15. The ticket hotline is on 0625 879920.

Amiga business

A NEW centre is being set up in London to promote the use of Amigas in businesses. The venture is the brainchild of David Brogan, a former Commodore sales manager who wanted to do more to get the Amiga recognised in specialist markets.

David says: "We will be concentrating on four main areas; desktop publishing, desktop presentation, the video industry and music".

Amiga Business Centres will prove to the businessman that an Amiga is cheaper than a Macintosh and easier to use than a PC by putting together complete business systems and running courses.

David sees colour graphics as the greatest advantage the Amiga has over the Macintosh.

In addition to putting together complete, packages for companies, the Amiga Business Centres will provide training on the more complicated packages with a soundproofed music room for exploring the possibilities of Midi. For more details contact David Brogan on 01-602 2701.

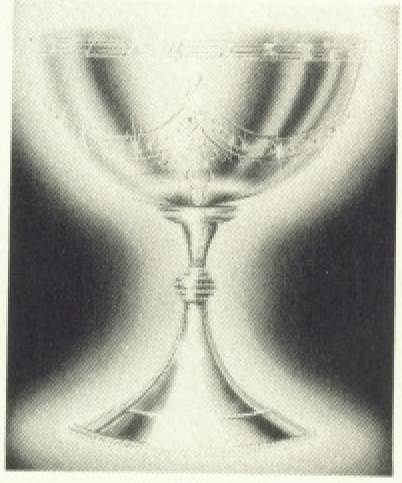
Sounds interesting

LOW cost sound sampling for Amiga users without loss of audio quality is claimed by Zen Computer Services with its A/D3.

The module is designed to work with popular software like AudioMaster and PerfectSound. By using a fast analogue to digital converter it will operate up to, and beyond, the maximum sampling rate of the Amiga.

Power is provided by the computer and the module plugs directly into the Amiga 1000, with a gender reverser required for 500 and 2000 models. Price £16 for the kit, £25 assembled.

Search for the Grail



AMIGA users will be embarking on a nationwide quest to find the secret hiding place of a £5,000 replica of the legendary Holy Grail.

The treasure hunt has been organised by Mandarin Software (0625 878888) to mark the launch of Lancelot, a graphic adventure game based on the legend of King Arthur.

Hand crafted from sterling silver, and gilded inside with 22 carat gold, the 7in high goblet is encrusted with semi-precious stones. It is hidden at a secret location somewhere in the UK.

To find it, entrants will have to get through a two-stage contest based on clues contained in the three-adventure Lancelot package.

Contest creator and Arthurian expert Pete Austin said: "All people need to do is study the Lancelot game carefully and the clues – plus their answers – will become obvious".

Lancelot costs £19.95.

Time for detection

THE first adventure game – and start of a planned series – from Psygnosis (051-207 0825) is Chrono-Quest, a three disc package written by French development house Infomedia.

The quest begins in 1920 with the discovery of a murder and the need to find a time machine the player must use. Price £29.95.



New DTP package has a laser lookalike

JIM BUTTERFIELD reporting from Canada

COMMODORE Canada now offers a desktop publishing package through authorised dealers. The deal includes an Amiga 2000, a 2080 long-persistence monitor, Professional Page software, and the LC-890 Silent Writer printer.

This last looks and acts like a laser printer, but is more properly called an LED image printer. A second package adds a bridge board for IBM compatibility.

At Chicago Ami Expo Commodore showed the Amiga 2024 monitor, a high-resolution (1008 by 800 pixel) unit with four levels of grey scale. Although it will work with the existing Amiga graphics chip, it seems to be aimed for the rumoured 1.4 system that will be able to exploit the higher resolution.

Ami Expo had good vendor exhibits, split about evenly between software and hardware. Notable was Great Valley Products, which showed ram/hard disc controllers for the A2000, 45 and 80 megabyte hard cards for the A2000, and expanders to fit hard disc or ram to the A500.

Discovery Software may be experiencing pangs of conscience. Now that it is producing new programs such as VIP, the virus-defeater, it has developed concern about harm done by piracy.

With this in mind, it appears to be withdrawing Marauder II – often thought of as the software pirate's right hand – from the market.

Nostalgia: Remember when the earlier Marauder would copy almost anything.... except itself? It could be copied, however, by its major competitor. Expect to hear lofty moral pronouncements from Discovery now that it has reformed.

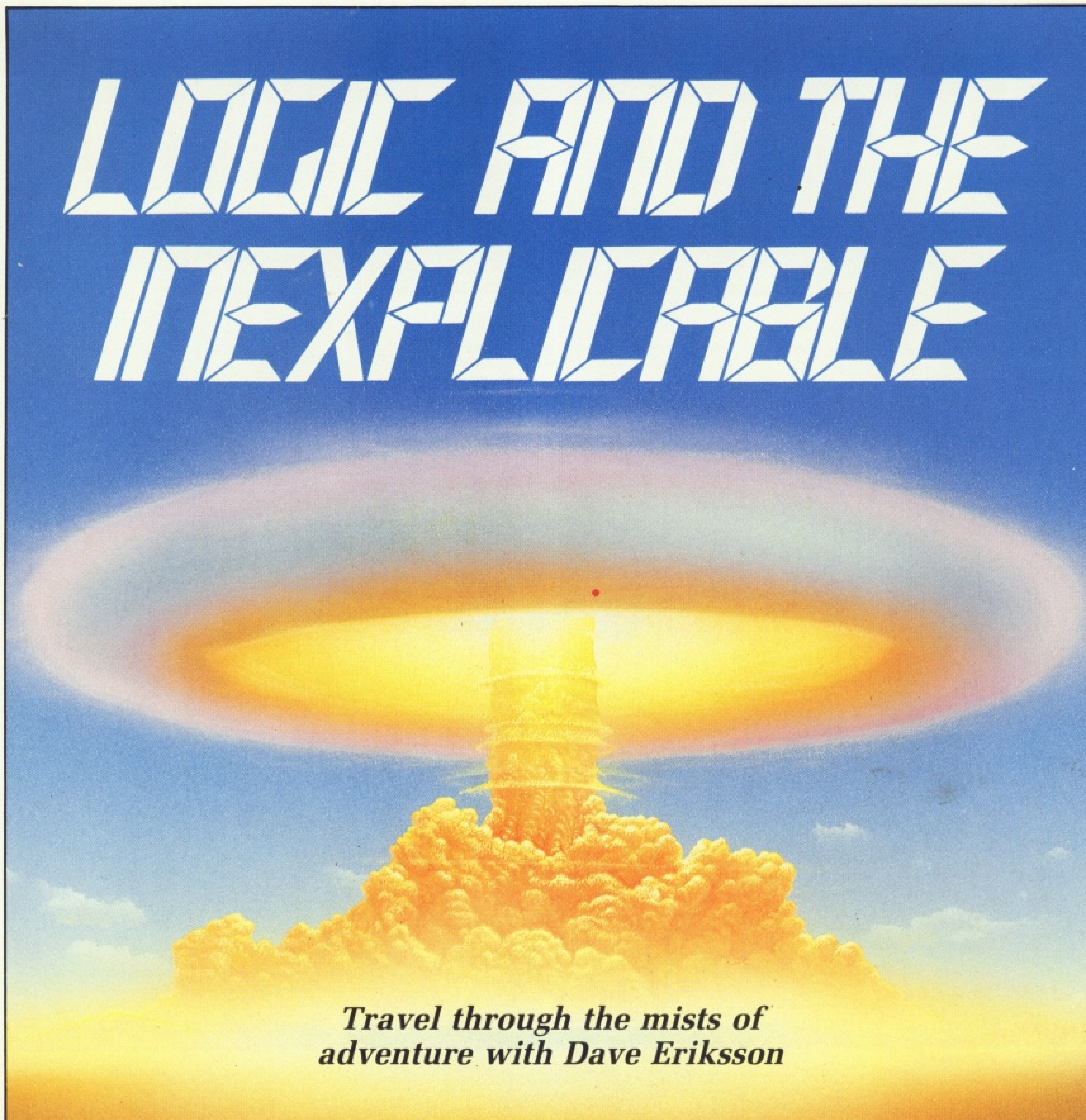
At an "editor's breakfast" in Toronto, Commodore Canada showed a number of excellent new programs that displayed the Amiga to good advantage. Apart from the processors, desktop publishers, spreadsheets, and database programs, many graphics and sound packages were shown.

Among these was WeatherConnect, a weather map animator package for broadcasters. Commodore indicated that world revenues were fairly evenly divided among the three product lines: 64/128, PC and Amiga.

Commodore mentioned the forthcoming 2286 AT bridge board. Prototypes exist and work, but don't look for it soon.

SubLogic has produced Western European Tour, a new scenery disc for Flight Simulator II. The area from London to Paris is well populated with airports and landmarks while channel airstrips are profuse. A second area seems intended mostly to allow you to duplicate Mathias Rust's flight from Frankfurt, via Helsinki, to Red Square in Moscow.

LOGIC AND THE INEXPLICABLE



Travel through the mists of adventure with Dave Eriksson

THE latest adventure to reach us from Activision is Mindfighter by Abstract Concepts, written by Anna Popkess and programmed by Fergus O'Neill, who is well known for his humorous and satirical adventures such as The Boggit and The Colour of Magic.

This is the first adventure produced using the team's new operating system, SWAN – System Without A Name. The game has appeared across many formats, which suggests the system is machine independent, an important advantage for programmers and the distributors who have to meet launch dates.

The team's previous games with their special brand of humour have been very successful. Mindfighter is completely different. It is a departure from their previous style, both in programming and in the story content.

The main character is Robin, a fourteen-year-old whose mind has extraordinary powers. He is one of four students being studied by an old professor at the University of Southampton. Suffering from a series of traumatic events, he attempts to look forward in time to find out his exam results.

Instead he wakes up to find a Southampton devastated by nuclear war. In addition to the horrors of rotting bodies, starvation and radiation sickness, there is also The System, a rigidly-enforced Chinese dictatorship using the survivors as slaves.

Back in the present, his friends manage to make contact with Robin, help him plan the defeat of The ▶



On the Docklands Road

◀

System and free the slaves. Robin then returns and they set out to prevent the war ever starting.

Adventures, however strange the setting, must have a consistent logic to be believable. Either by default, where there is little text and nearly all the detail comes from the player's imagination. Or, as in the case of games from Infocom, Level 9 and Magnetic Scrolls, where the text is long, descriptive and carefully tailored to the plot. Mindfighter has long descriptive text but read in conjunction with the book, it is inconsistent and illogical.

The 150 page book must be presumed to contain clues, and it is in reading this *and* playing the game, that I found difficulty with the logic. Playing the game alone, albeit with its own inconsistencies, would probably not have caused the same build-up of disbelief.

SWAN will accept complex commands and there is some interaction with independent characters. The vocabulary does not seem to be very extensive and the interpreter's responses are limited. "That wasn't possible" appears with monotonous regularity.

This is frustrating. You do not know if you are simply tackling the right problem the wrong way, or if the words you are using aren't recognised. EXAMINE XXX often gets the bald statement "Robin couldn't examine that." One can live with these shortcomings, but they do not help the game's atmosphere.

Mindfighter has a totally illogical map. Not only can you travel east to go west but in some locations if you go south, then immediately north, you find an entirely different location. Again this is a question of logic. Although I found the mapping an enjoyable challenge, this type of confusion does not inspire confidence in the gameplay as a whole.

Pressing a mouse button or Return with no command entered, brings up an icon display window. This provides a number of options including ram or disc SAVE/LOAD, printer on/off, graphics on/off and OOPS

The text is very descriptive, not for the squeamish, and dramatically sets the scene. The graphics occupy a small window across the top of the screen and add to the desolate atmosphere of the story. You will not find much humour in Mindfighter, and even Robin turns out to be a three times murderer.

This adventure is not my cup of tea and it will be interesting to hear what you think of it. But with so many previous hits to their credit, SWAN and Mindfighter surely only represent the beginning of what I hope will be a new and productive era for Abstract Concepts.

REPORT CARD

Mindfighter
Activision
£24.95

STORY LINE
Strong but inconsistent on detail.

AURA
Many things detract from smooth flow.

STAYING POWER
Initial difficulties could put you off.

GAMEPLAY
Only limited variation to puzzles.

VALUE
Plenty for you to get your teeth into.

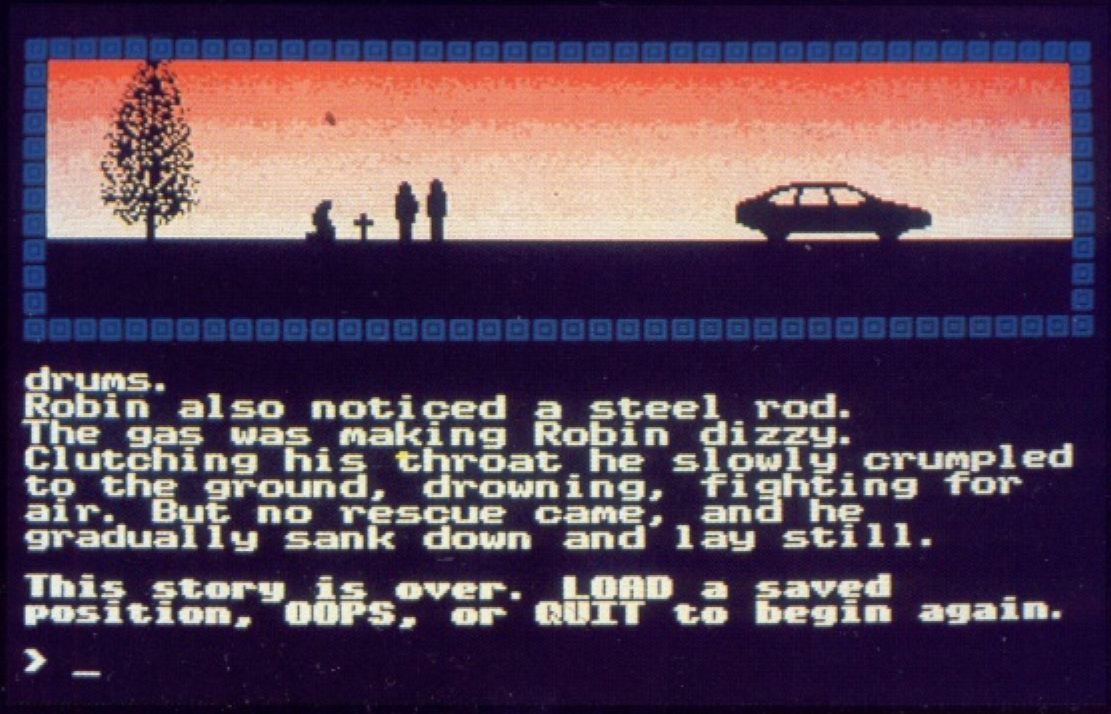
DIFFICULTY
Reading the book will help and hinder.

OVERALL 59%

Not up to the standard of previous games.

PLAYING an adventure takes time. Do you want to be glued to your Amiga, unable to take a coffee break in case you lose the thread of what you are doing? You do? Then you will not go far wrong if you play Jinxter, written by Magnetic Scrolls and distributed by Rainbird.

Jinxter has been around for a short



Beware: The end can come quite suddenly



The carousel that represents Turin's bracelet

while, but it is only by spending many hours at the keyboard that I can judge it. Previous games from the same source, The Pawn and The Guild of Thieves, had an enormous amount of hype and publicity applied to them. Good games they were, but somewhat overrated by all the talk of wonderful parsers and great graphics.

Jinxter has some great pictures to see along the way, but also secretes some solid classical puzzles for you to solve. It is not a terribly difficult game, but will keep you guessing for a time, even if you decipher all the clues in the smart package.

The action takes place in Aquitania, on a world not so very different from ours. There are buses to run you over and telephones to ring at the most inappropriate moments. There are fairground roundabouts and trains to miss. Magicians, Green Witches and immortal Guardians.

The Guardians generally watch out for people's safety and well being. They seem to have a penchant for herringbone suits and live on cheese sandwiches. The Green Witches have been a thorn in the side of the Guardians for as long as anyone can remember. Their aim is to cause as much bad luck to all as possible.

Many years ago a magician called Turani created a magic charm bracelet which would inhibit the powers of the witches. Although they cannot destroy the bracelet while it is whole, the witches have managed to bribe certain members of the public to remove its individual charms. It is now so devoid of protection that the chief witch, Jannedor, is almost in a position to destroy its powers entirely.

The less charms the bracelet has, the more bad luck the witches have to spread around and the more work there is for the Guardians. They are now very short of manpower so have selected you to be their agent. You must find the missing charms to the bracelet and re-assemble it to restore its magical power.

Moments after you have had this explained to you, you get a telephone call for help from an old friend, Xam. It later turns out that Xam has realised what is happening and has already tried to rescue the magic charms from their new owners. The Green Witches found out and have kidnapped him. While you are saving the world, you may as well rescue Xam as well.

The game starts with you travelling home by bus. Check your inventory, look around and just retain your wits and you will shortly be walking through your front door. Check out your house thoroughly and collect anything you think will be useful. You can carry quite a lot with you, and there is no point in having to come back unless you have to. In this game you can look under things.

During the first half of Jinxter you travel by reasonably conventional means and can move freely backwards and forwards between locations, so don't panic if you realise you have left something vital behind. Into the second half it may be quicker to start again.

Your first task is to get to Xam's house. The farmer has put a ferocious-looking bull in the field you usually cross on your way there. What don't you usually do to bulls? Xam's house is a mess, he is not the neatest of people. Perhaps you can find some clues or useful items to help you on your quest.

From here there are a few side trips before you finally cross the lake to the village. By this time you will have found a number of useful things, think carefully of what you want to carry on from here, and visit the Clockmaker last.

You are now into the second half of the game and the pace hots up; be prepared to run if you have to. Once in the Green Witches' castle you are nearly there. With a bit of luck you may find Xam and finish what you came to do. Just stay clear of Jannedor – she's decidedly lethal.

Jinxter is well thought out and has reams of atmospheric text. The graphics are excellent and well sprinkled throughout the game. The parser is Magnetic Scrolls' specialty ▶

and is very good, even though it is sometimes frustrating trying to be clever enough to match up to it.

You may have some oil with you and want to oil some rusty door runners. OIL RUNNERS is not good enough, you have to be very explicit: OIL RUNNERS WITH OIL is what it expects from you. There are a number of occasions where such dumb loyalty to its cause can cause similar frustration.

This is only a minor irritation. The only real problem with clever parsers is that sometimes they allow you to be too clever for your own boots. One example is the mousetrap. If you want to use it, just drop it; don't try to place it somewhere special. I tried to be clever and it took me ages to realise that the direct approach was all that was needed.

Magnetic Scrolls does not yet have an OOPS command, so SAVE your game position often, not because you may die suddenly but simply so that you can return in time to get something you may have forgotten.

Jinxter is good fun and is suitable for adventurers whatever their experience. A number of coded clues are provided, that offer help – but do not tell all – to those in need of a helping hand.



Beneath the baker's shop

ADVENTURES with full reviews in this column are always regular production copies that anyone can go out and buy. Sometimes games are the subject of special previews by software houses or are not available on the Amiga format at the time the column is written. The first half hour is intended to give you just that, a brief initial assessment of what is coming.

Two such games that should be available very shortly are from Rainbird: Corruption, by Magnetic Scrolls, and Legend of the Sword, by Silicon Software.

In Corruption you play a financial whizkid. High finance is a jungle, and at the moment you are not the hunter. Jail could be around the corner and Mr Big is looking at you with ideas of extreme termination.

Graphics are as good if not better than those of Jinxter. Unlike their previous games where you must find and use objects, here you must study and use people. Plenty of character interaction is vital to your success.

Corruption is not an easy game, but should you accept the challenge it could take you weeks to solve.

Legend of the Sword traces the travels of you and a band of hardened adventurers in the search of a legendary sword and shield. Their recovery is the only hope against the evil wizard Suzar.

You may well think that this is a fairly pedestrian plot, but the way it has been implemented on screen is not. There is a mixture of text input, mouse-driven icon and pull-down window control. This could take a bit of getting used to at first. With all that clever mouse work, it is easy to forget simple text input.

The graphics look great, and a map of where you have been is generated on screen – no need for pencil and paper here. See it, buy it.

News has reached us of games which are still a long way from completion. As with our two feature reviews they come from Activison and Magnetic Scrolls.

The Mag 'Rolls game is Fish. You play a goldfish in a bowl. Your world is pretty boring until the giant human gives you a plastic castle for entertainment. You swim through different windows and solve different sub-adventures, turning into a human in the process. After the huge delay between the first two adventures Magnetic Scrolls' games seem to be coming thick and fast. They are now working on a non-adventure product, tentatively titled The Toy, a Lego-like construction program.

The new Activision titles come from Infocom, they are Restaurant at the End of the Universe and Zork Zero. Restaurant is the sequel to Hitchhikers Guide to the Galaxy. It should be every bit as funny and I look forward to playing it.

ZORK Zero is *the* big departure for Infocom, their first adventure with graphics. Finding out how arguably the greatest adventure writing house copes with such fiercely-resisted progress will be interesting.

REPORT CARD

JINXTER
Rainbird
£24.95

STORY LINE
Plenty of laughs with the puzzles.

AURA
Aquitania could be outside your door.

STAYING POWER
Lots of logical puzzles to solve.

GAMEPLAY
Friendly parser, if a little pedantic.

VALUE
Would cost a great deal more to go to the cinema for the time taken to solve.

DIFFICULTY
Good challenge, medium difficulty.

OVERALL 70%
Addictive and fun to play.

Desktop Publishing can be a real jungle...

Confused by the dazzling array of products to emerge from the booming desktop publishing industry?

Concerned that you may not find the right system to meet your particular requirements?

Can't find the time to make the rounds to check out alternatives?

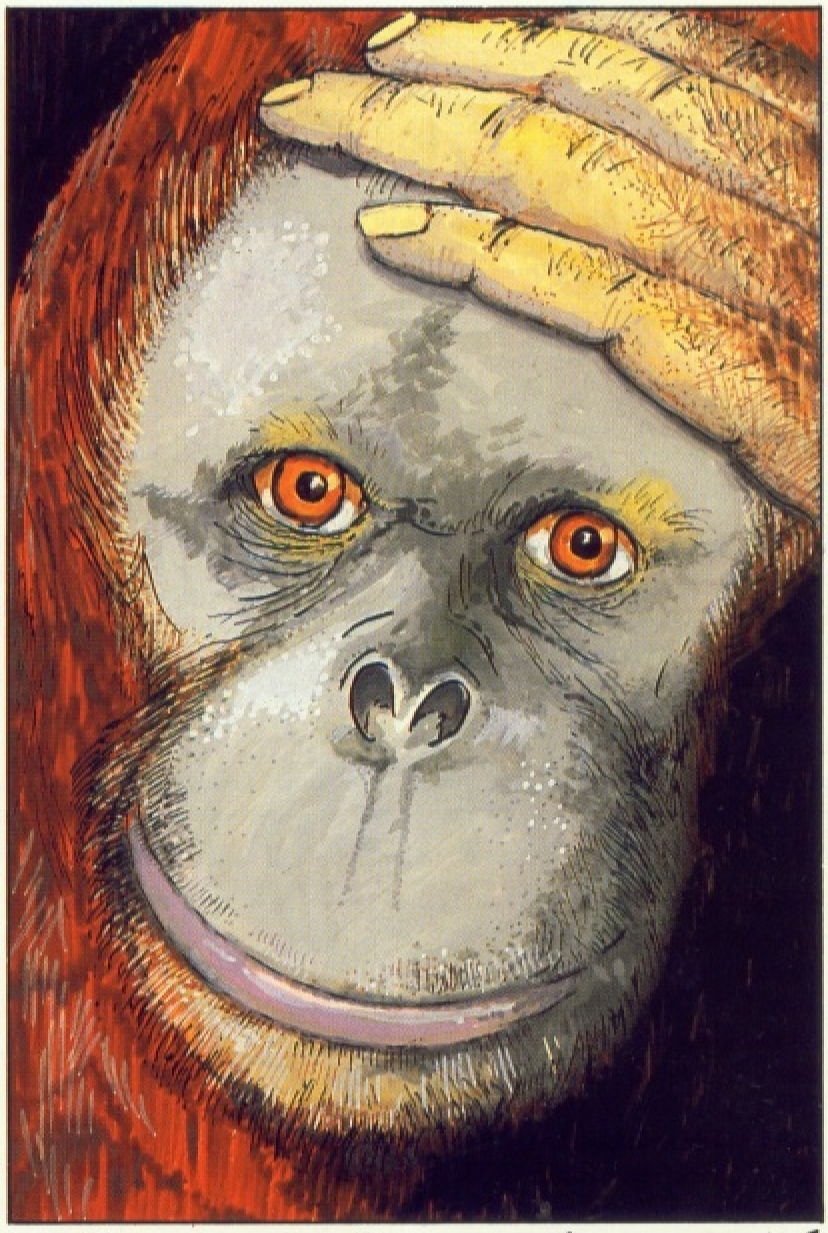
The International Desktop Publishing Show 1988, some 50 per cent larger than last year's event, will provide all the answers.

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SOLID GOLD

Chris Holmes takes a pixel-powered trip through the world of solid graphics, past, present and future

GAMES using solid graphics are suddenly the rage. The future of computer entertainment clearly lies with the 16 bit revolution. While there was once a time when a software company would port an 8 bit game, publishers have learned to use the raw processing power of the 16 bit machines to create stunning 3D solids as the basis for future entertainment.

Perhaps the best reason for the success of this new crop of computer games is given by Firebird's Clare Edgeley, who claims: "Solid graphics provide a greater sense of perspective, reality and atmosphere. They are much more enjoyable to play". The 68000 gives programmers the processing power to create graphics which were impractical on 8 bit computers.

Contrary to popular belief, the blitter is not directly advantageous for drawing and manipulating 3D solid graphics. Ian Hetherington, who is currently coding Aquaventura, suggests that it can be helpful in creating the illusion of solid 3D graphics when in reality it is only working in two dimensions.

This idea seems to be shared by Jez San, of Argonaut, who says: "The blitter is very good at filling large areas. When drawing moving objects, a programmer will only draw the differences between frames. It is much quicker to make a square move sideways by chopping a lump off one side and drawing a similar sized lump on to the other than to erase the whole square and re-draw it.

"This method is not only quicker, it is less flickery. It does mean that you have to draw twice as many, smaller shapes. You can use the blitter to erase and draw these but the chip needs to be set up, sent the position and shape it has to fill and then told to do the job. This setting up process often takes longer than drawing the shape using the 68000, particularly if you have a lot of small shapes".

MOST 3D programmers only use the blitter for clearing large areas. This means that some programs will run faster on the ST, because the Atari has a 10 per cent faster clock – the heart beat of the machine. Anyone who claims that this makes the Atari better is under employing the Amiga. That speed advantage can easily be won back by getting custom chips to look after colour cycling, sprites and sound. Not forgetting that an Amiga has four times as many colours as an ST in bit plane mode and 256 times as many in HAM mode.

Most computer companies in the UK are developing games that use solid graphics. Some see the market as a passing trend built upon a wave of publicity, others believe the market will become the future of computer software in this country. Rest assured that whatever the outcome, there will be no shortage of solid games within the next few years that will earn the right to be called Solid gold.

INTERCEPTOR – EA

Some of the algorithms for the 3D solids used in Interceptor were designed around the blitter's ability for line drawing and area filling, but Bob Dinnerman also wrote his own routines for creating and moving the polygons necessary for constructing the solids.

In terms of solid appeal Interceptor is a winner, the graphics are surprisingly detailed. It is always difficult to decide on how much of the computer's power should be spent on making the action fast and how much should be used to improve the detail.

SENTINEL – Firebird

Geoff Crammond is a programming genius. He wrote Sentinel for the BBC Micro and it has now been converted by Steve Bak to the Amiga. Unlike other games featured here, Sentinel doesn't rely on speed for effect, but uses stationary solids to give the illusion of being in a surreal world.

The landscape is formed by calculating the points from a formula and then filling the line graphics with colour. This way millions of landscapes are available. They can be calculated rather than stored.

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CARRIER COMMAND – Rainbird
Carrier Command on the Amiga looks practically identical to its ST counterpart. It's only when you start to play the game that the changes become obvious. Realtime has improved the speed by using the blitter to draw horizontal lines and its own extensive algorithms for creating 3D solids have managed to make the Amiga version run faster.

Carrier Command is one of the first of the new genre. Interaction that starts to stretch the power of the Amiga, with solids used not as a gimmick but as an essential part of the game.

STAR GLIDER II – Rainbird
Argonaut, the programming team responsible for Star Glider II, boasts that the game uses more polygons than any other solid game yet. Having worked to this goal for the last 18 months, they are obviously more than qualified to make such a boast. It is the only game where the solid shapes are also animated. This has not been at the expense of speed. Argonaut has managed to increase the speed at which the solids are animated and in some parts of the game the solid objects and shapes move at 60 frames a second.

Star Glider II is possibly the most polished and advanced piece of solid programming yet. The graphics are a joy to behold as they whizz round the screen in lashes of colour and accurate detail. The gameplay is well thought out, the combination of subtlety and aggression providing a perfect balance for gamesters looking for more than just a simple blast.

BUGGY BOY – Elite
Using solid graphics in arcades is no longer considered innovative, but home computer versions are only starting to arrive. Buggy Boy uses the conventional methods already discussed in this feature to create a 3D solid landscape, scrolled smoothly throughout the game.

It is not the first car racing game to use solid 3D on the Amiga, but it's certainly the most polished and playable, and as such shouldn't be missed by any Amiga gamester who aspires to high speed race action.

How solid graphics are created

A programmer creates solid graphics by designing simple isometric polygons, usually a triangle, since three points define a plane. To keep the maths fairly simple – and fast enough for an action game – it is best to work in individual planes.

Polygons are grouped together and defined as a solid. The shape will not be in true 3D unless the user is able to see it from every angle. This exacerbates the problems of keeping the maths fast.

The games briefly covered in this article are only the start of what could be a major revolution in the computer software industry.

Whirligig is the brainwave of Mike Singleton. It offers light source illumination, which makes shapes more believable. All the difficult calculation is done at the start of the level. This limits the ways in which a spaceship can be displayed, but makes the game run very rapidly.

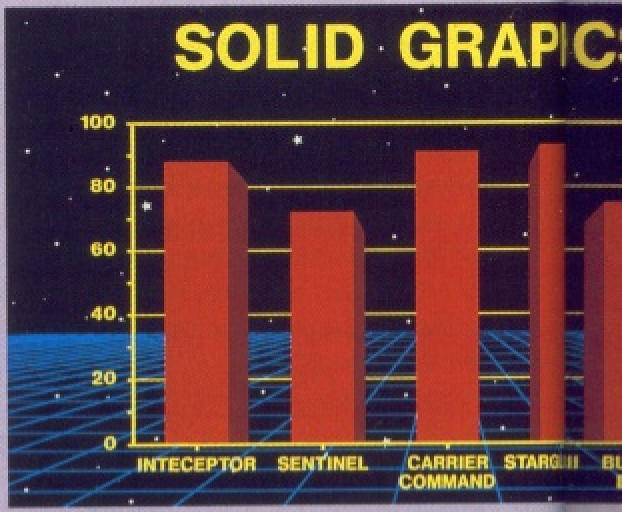
Virus, another solid release from Rainbird, is the game it was supposed to be impossible to convert down from the Archimedes. David Braben has done a wonderful job and, as ever, the Amiga has the best sound effects.

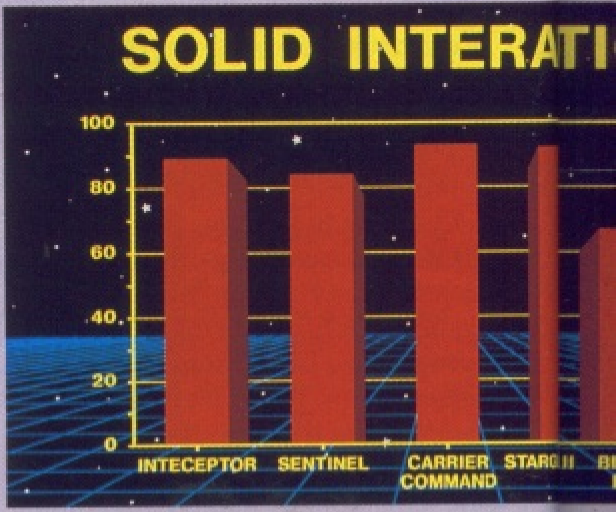
David's last game, Elite, is being converted by Mr Micro. The Amiga version, which will use solid graphics, will not be ready until Christmas. First reports indicate that it will be a corker.

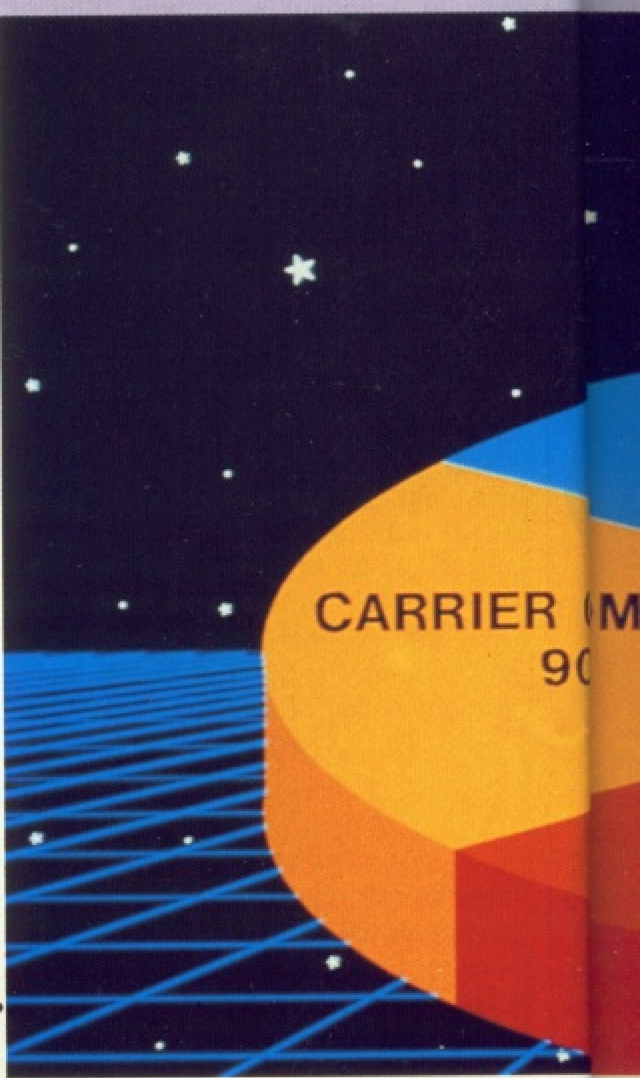
Ring Wars, from Cascade, is similar in concept to Elite, being based on trading and deep space exploration. Although 8 bit versions use vector graphics, a separate Amiga programmer will be using solids.

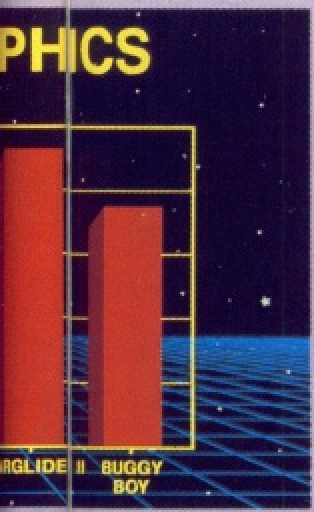
Skeltar, from Novagen, is much more of a traditional 3D arcade blast, while Damocles and Aquaventura, from Psygnosis, are reputed to be something special.

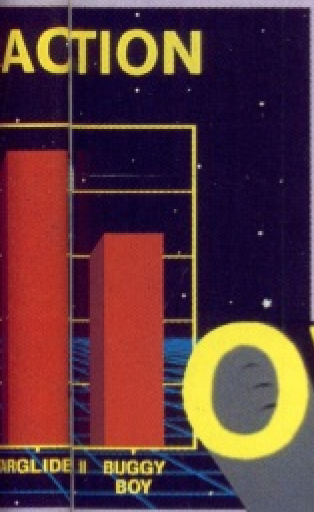
This month *Amiga Computing* uses Amiga graphics to introduce a new style of comparing the major features of competing software











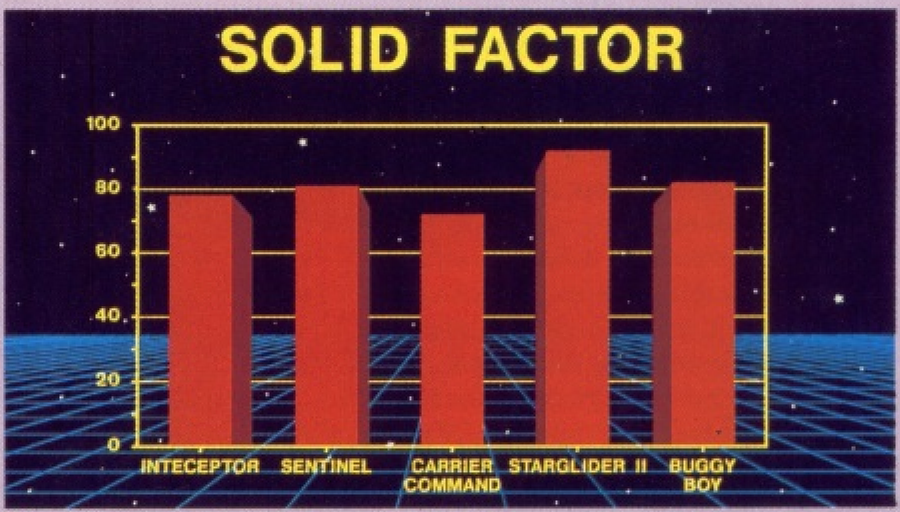
Solid Interaction: *The way in which the graphics interact with the game. A gimmick – or an essential part of the game.*

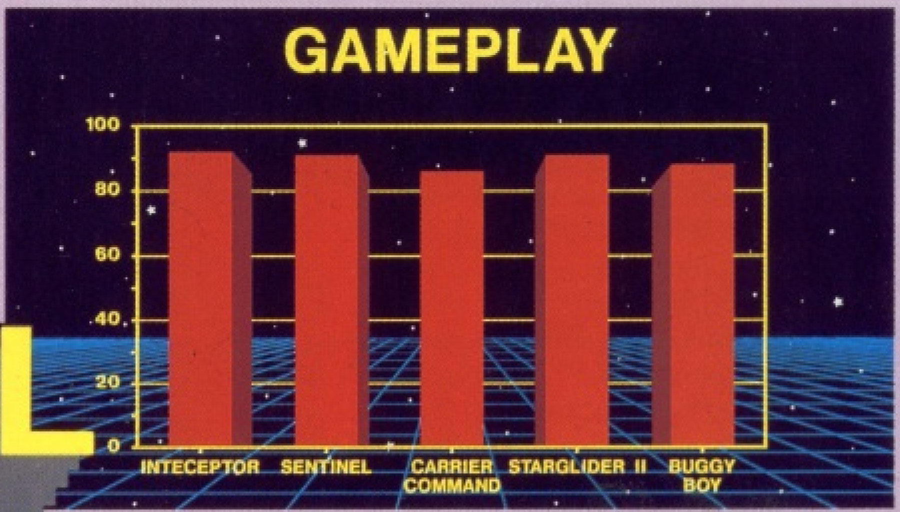
3D Solid Graphics: *Use of colour, speed of movement, smoothness animation, type of shape, definition.*

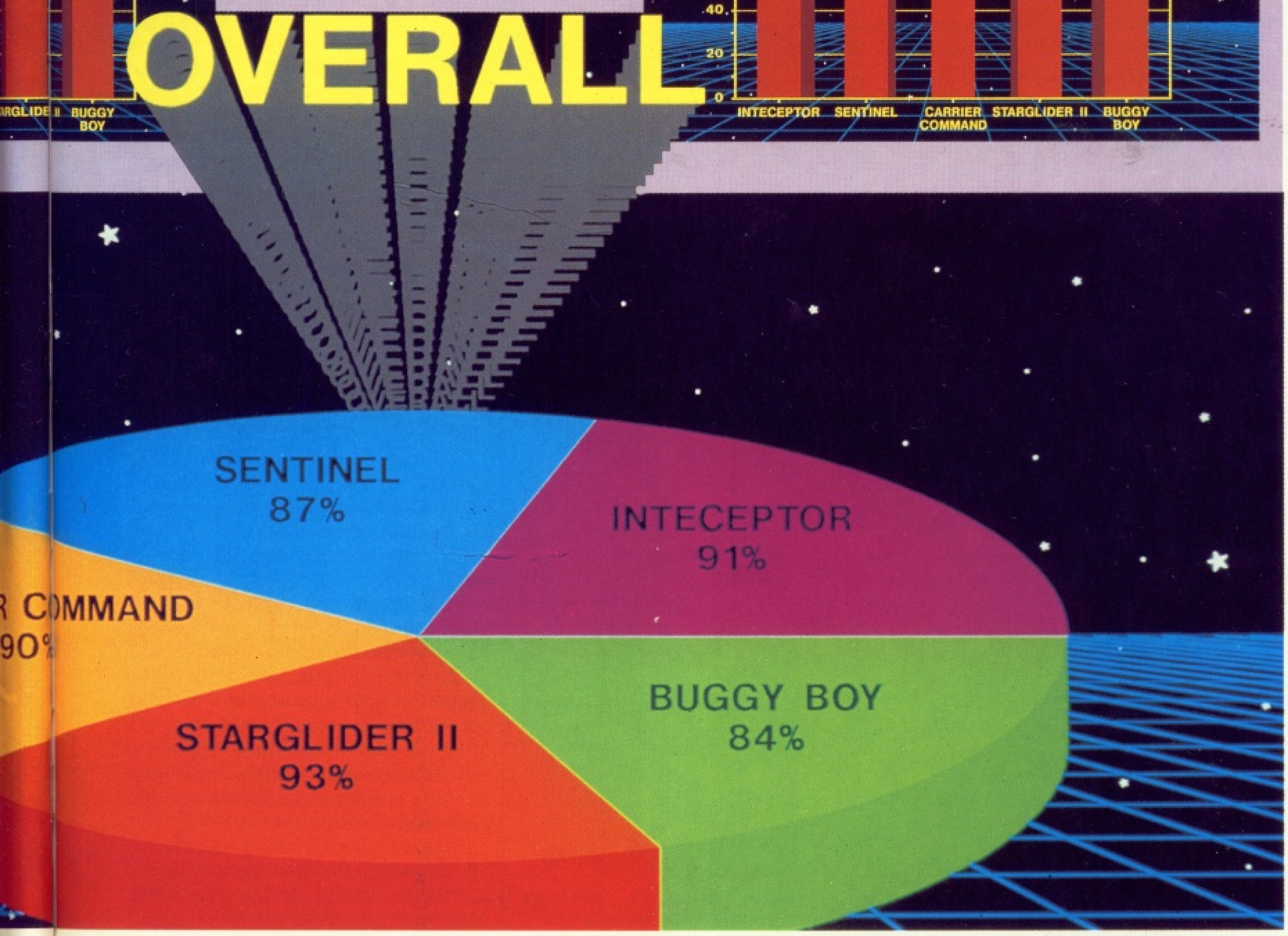
Solid Factor: *Use of the Amiga, how far the programmers have pushed the hardware, solid programming techniques.*

Gameplay: *An indication of the game's playability and addictiveness.*

Overall: *Overall rating taking into account the use of the graphics to produce an original and playable game.*







Experts in the impossible

Simon Rockman visits Realtime – to see the men who build worlds inside an Amiga

FIRST encounters are important. Psychologists say that you can decide whether you like someone in the first 30 seconds. Assuming the men with the PhD's have got it right, it was a good 30 seconds.

I first met Realtime at a ZX Microfair, a computer show so down-market it bears more of a resemblance to Petticoat Lane than the Mayfair atmosphere of most computer shows. Microfairs are something special. The exhibitors love them the way they are.

The only thing that was special was what Realtime had on the screen of its Spectrum – a fast playable 3D vector game which looked uncannily like a full, accurate and realistic clone of the Star Wars arcade game.

That was back in the heyday of the Spectrum, but Realtime continued to produce games which were mind-bogglingly good. Games which elicited the comment "You can't do that on a Spectrum", when others, like Ultimate, have fallen by the wayside.

Ian Oliver, Grahame Baird and Andy Onions are no more pretentious than the tatty trestle table they stood behind then. Their programming success has been based on being very good mathematicians.

They met at Leeds University, a place they still have affection for, and look forward to the long holidays when students join them as willing programmers wanting summer jobs. Perhaps their attitude is best summed up by the advertisement they took out in the university rag mag: "Realtime (Games Software) Limited – Great guys to go out for a drink with". Realtime are about as old school tie as a teddy boy's bootlace.

Their mathematical skills have shown in a wide range of 8 bit games – Z80 stuff for the Spectrum and Amstrad CPC. Programs include the aforementioned StarStrike, StarStrike II – the first program which was sold by a separate company, the very underrated StarFox handled by the late Ariolasoft, StarGlider for the Amstrad CPC, IBM PC, Spectrum and a wonderful Amstrad PCW version. Realtime waved their computer magic over Elite – producing a solid version for the IBM.

Success hasn't brought plush offices and arrogance. Instead there's a comfortable suite in a large block. Other companies there include Vektor Graphics – who have just finished Empire Strikes Back for Domark – and a recruitment company for mainframe programmers – very inconveniently called Realtime. When the receptionist told me that there were two Realtimes I was taken aback. There is only one Realtime in my book.

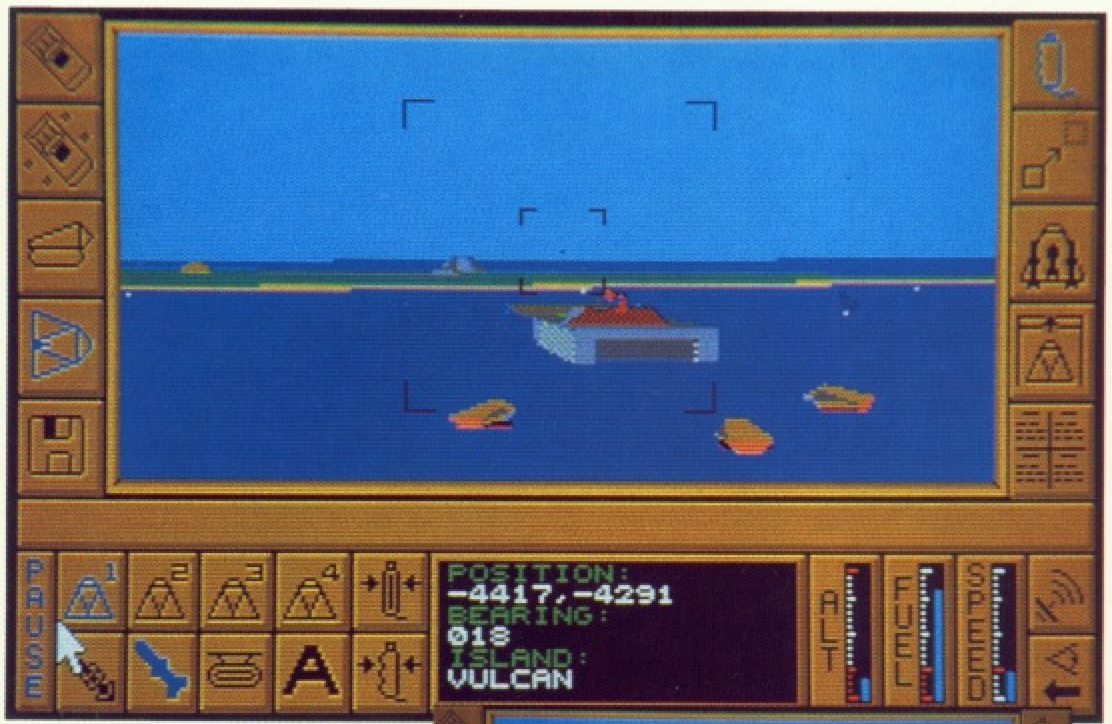
Success has brought freedom to buy lots of computer equipment. "See that monitor stand over there" says Ian, "it's an Acorn Archimedes – Grahame is in charge of reckless purchases". A less reckless purchase is a Compaq 386/20 – an IBM compatible PC which is about 20 times more powerful than a standard machine.

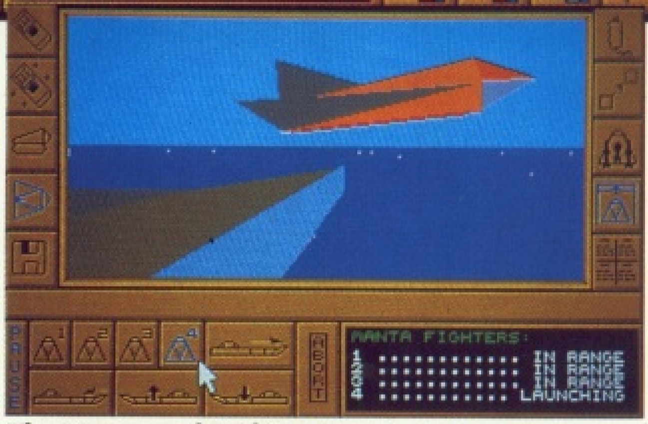


From left to right: Grahame Baird, Ian Oliver and Andy Onions

REALTIME uses the Compaq for all program development, which with a clever assembler – called PDS – means they can assemble 500k of object code in less than 30 seconds compared with more than six minutes on the Atari ST. They justify the purchase of this £8,000 computer by saving time while developing a program and by thinking of it as the kind of toy they would want to buy if they didn't need to. "We are computer techies at heart", claims Ian.

The first 16 bit game to be developed on the Compaq is Amiga Carrier Command. Realtime is one of only two companies allowed to use





The Mantas and Walruses are the key to your tactical success

the pre-production version.

Carrier Command is a cross between a strategy game and a shoot-em-up, a mix which has been tried before and was the reason for the success of Elite – possibly the world's most profitable game.

As ever, there is a story. You captain one of two aircraft carriers sent to populate a series of volcanic islands. Unfortunately the other carrier has been overrun by a terrorist organisation. Your mission changes from one of colonisation to one of war. You must either occupy all the islands or sink the, now enemy, carrier. Fail and the enemy will destroy all the islands.

Your weapons take the form of a squadron of Manta aircraft and a squadron of Walrus amphibious tanks. Skill at controlling these is essential, but you also need a grasp of strategy before you begin.

Just as an army marches on its stomach, your carrier needs supplies. Starting from a home island you build up a resource network. Sailing from island to island you colonise each. The tanks take pods which turn into resource or defence modules. A resource island can send a shuttle to refuel and rearm the carrier.

A typical military strategy might be to sail to an enemy island and send a couple of Mantas out to weaken the defences, dropping a bomb or blasting with lasers. Then move in with either the carrier's telescopic cannon or a couple of Walruses. You can control up to four of each at any one time, but this gets confusing and you are best off using one of each for attack with a second for back-up.

A captured island can be turned and made into part of your supply route. All this features stunning, fast 3D solid graphics, detailed ship control – including damage control and a friendly icon control system.

Realtime does not expect anyone to sit down and play a whole game. It takes a couple of minutes to sail from one island to another – and there are 64 in the whole game. There is a save game feature, and for more impatient players an action option which starts with your carrier near an enemy island and a quarter of the way up the difficulty scale – which rises as the game progresses.

Carrier Command has been heavily Amigaised. It looks similar to the ST version but by stretching the machine they have compacted the program. This saves 30k which has been used for David Whitiker's sound. The title music is a product of Dave Lowe's Spectrum and synthesiser.

The blitter is used for drawing rapid horizontal lines and clearing the screen. This gives the Amiga a line draw speed of 140,000 pixels per second compared with the ST's 85,000. Clever use of the custom chips means that even a 16 colour sprite takes only one blit – other programmers take four – with the processor handling one bitplane while the blitter looks after the other three.

CARRIER Command has 1.2 Mb of source code. It took a year to develop and is at its very best on the Amiga. But to Realtime the machine we love is just a clever bunch of chips at the other end of a lead plugged into the back of their Compaq. The only software they ever load is the PDS downloader – the next step is to rip out the Amiga kickstart rom and insert the downloader.

Realtime is not afraid of hardware. While I was there staff had an Apple Macintosh in pieces, preparing to add a PDS interface to it. Clever stuff considering PDS doesn't make a Mac interface.

With Carrier out of the door, Realtime is working on a 3D space game for Rainbird. Called EPT, and looking for a better name, it does not have as much code as Carrier, but the play area is bigger. There is more data and possibly more to do.

Details are sketchy: The game was originally started by Adrian Stevens – who is now doing Mainframe for Mirrorsoft's new label The Image Works. You can fly in a variety of ships, trade, do battle and live in an alien universe. A game to out-Elite Bell and Braben's space classic.

When that is finished it is back to the action. Vectrace is a game in which a spaceship flies around a 3D maze. Designed by David Bishop, it might see the re-emergence of vector graphics – unfilled wire frame, or it might be the first game Realtime does with a third-party view.

Next time you see them standing behind a trestle table, offer the great guys from Leeds a drink and they might tell you.



Seeing double

Many games have claimed to produce effects which leap out of the screen. Rupert Goodwins looks at some hardware which does just that

IT is not often that *Amiga Computing* runs a review of a product that you can't buy in this country. Rarer still is the review of something that isn't immediately useful for serious work or any good for existing games. Rarest of all is the product that can be all these and still make the most cynical of programmers disbelieve his eyes. But then those eyes were looking at some amazing spectacles.

The spectacles in question are the Haitex X-Specs 3D. From the outside, they look like Darth Vader's welding goggles. By some thoughtful design, the X-Specs fit over any less interesting but optically more useful glasses that a person might need. And they look incredibly cool – try travelling on a bus with them plugged into your Walkman to really knock people out.

FROM the inside they turn your Amiga's monitor into a three-dimensional display. It's not true 3D – the technical term is stereoscopy – but it is very effective. The stereoscopic principle was discovered by a scientist called Charles Wheatstone in 1832. By feeding a picture to one eye, and another identical but slightly shifted picture to the other, the brain combines the two and sees the resulting image in three dimensions. The greater the difference between a point on one picture and the point on the other, the closer it seems. Charlie had to use mirrors, lenses and large chunks of pre-Victorian engineering. If only he'd had an Amiga...

THE X-Specs contain two sheets of liquid crystal sandwich, one per eyeball. The liquid crystal is the same as that found in watches and can go dark or light at the whisper of a volt. Connected to the sheets are some wires, and these wander off to some electronic circuitry in a box which plugs into the joystick port.

When a signal is sent to the box from the joystick port, one of the liquid crystal sarnies – actually called a shutter – darkens and blocks the light to one eye. Another signal does the same for the other eye.

The software that comes with the Amiga draws two pictures. It gets the Amiga to display one at the same time as it turns on one of the shutters; then it switches on the other shutter and displays the other picture.

Result – each eye sees its own picture only. Make the pictures slightly different, and the brain does the visual equivalent of switching to a stereo radio station.

THERE are drawbacks. As each eye is only getting a picture for half the time it would normally, the image is prone to flicker. It's also darker than usual. But the plus is that the darker, flickery picture is coming at you with a vengeance.

It's clear that the spectacles will do nothing for existing software, so to that end the Haitex people provide a disc full of stereoscopic goodies to show off various aspects of the X-Specs system. There are a collection of pictures – paintings, cats, odds and ends. At first they look unexceptional, but moving something like a hand towards them prods the visual cortex to leap into stereopsis. It's an extremely eerie feeling, as your brain insists that your hand is just to the left and behind the cat's ear, yet there is nothing there to stroke.

Then come the animated demos. The simplest – and one of the most effective – is two rotating cubes in a large box. They rotate in the back of the box, then one wanders forwards and brushes your nose. The other one joins it, spinning away. It's the least sophisticated of unfilled wire-frame animation, but the urge to reach out and pick up one of the cubes is irresistible.

It also demonstrates another peculiarity of stereopsis. Normally, the brain works out the position of something it's seeing from perspective clues. Railway lines appear to meet on the horizon. Things get smaller the further away they are. These cues are so strong they override stereoscopic information, and no matter how much separation there is between the two images the brain will insist on rejecting one optical illusion for the other. When the time comes for software writers to take advantage of the specs, they'll be able to choose which effect to use.

The next animated demo is a collection of molecules. This isn't so out-and-out impressive, but the images of various compounds spinning in three dimensions is good enough to make any chemistry text book seem dull. Some of the substances are a little interesting as well. It comes as no surprise to learn that the usual unhinged American influence – well, it *is* an Amiga – is hard at work here.

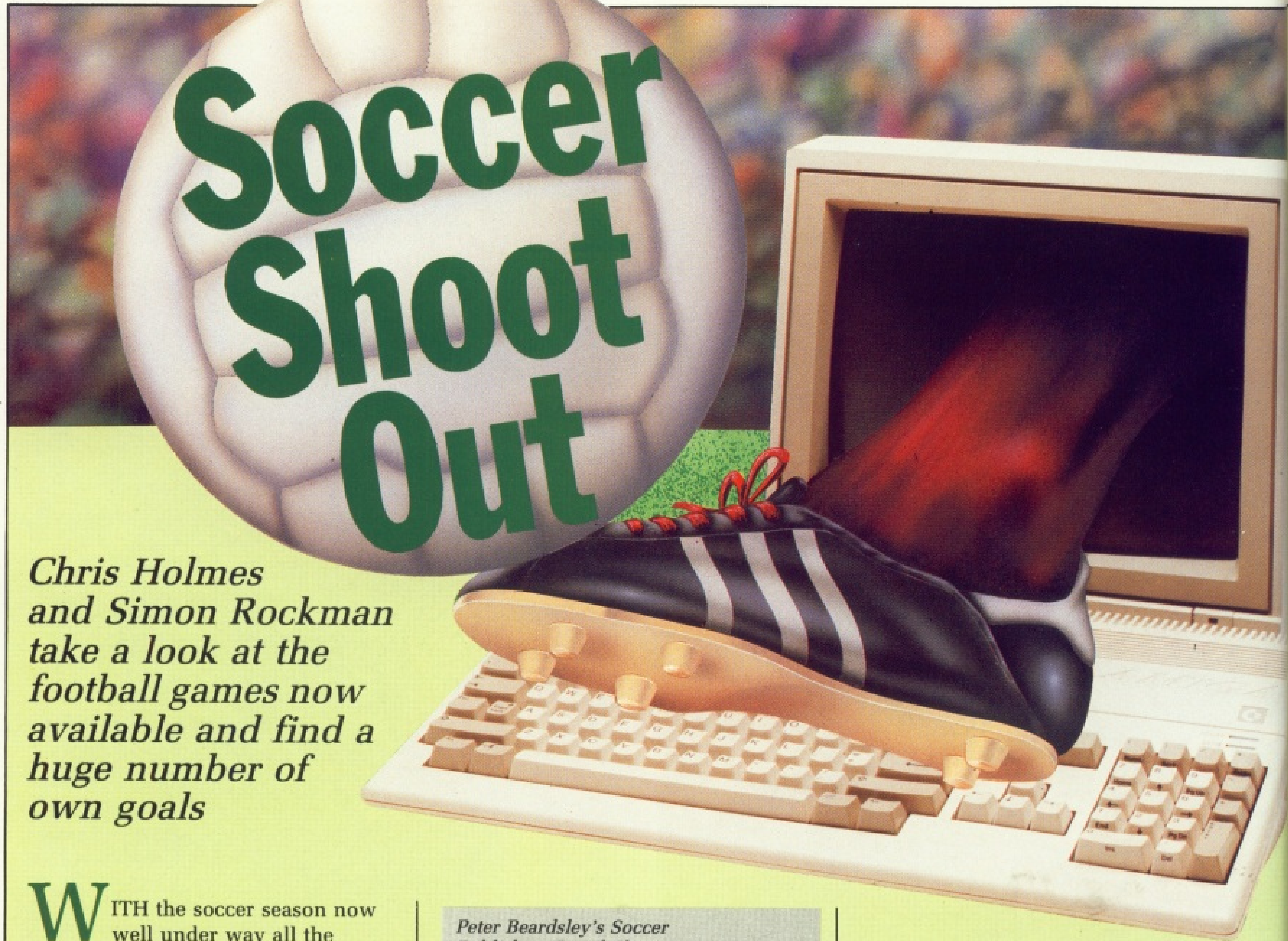
Finally comes the game. Space Spuds it's called, and space spuds it is. You pilot a spacecraft through interstellar space and shoot potatoes. Rather good, framegrabbed, horribly solid and slightly grubby, but potatoes. There are also some smirking suns that whip in from over your shoulder and fire blue balls of meanness that come at you with much venom. On higher levels, there are pizzas and what looks like jam ring cake.

IT would make a barely acceptable budget game, were it not for the awesome 3D effects. Remember the beginning of Star Trek, where the Enterprise swoops through clouds of stars which drift off in either direction? Space Spuds takes your monitor, fills it full of stars front to back and then animates them. Just flying through this is almost more fun than shooting the tatties. And there's a stereo sound track sampled from Pink Floyd to complement the teeth-shaking explosions and wax-melting laser zaps.

With a pair of good headphones, the spectacles on, the volume up and the lights out, the house could be sat upon by a 40ft cockroach and it would go unnoticed. This is the next best (legal) thing to a galactic transporter beam.

Now Space Spuds is a simple game. What would happen if Argonaut got its teeth into writing real 3D stuff, for example? As yet there is no UK importer for the spectacles although this might change soon. The review pair was bought in America where they, with their software, cost $100, but the design and electronics are simple and it seems possible that the whole lot could be produced for under £50. They're more than a gimmick; after using them other games seem, well, flat.

Verdict? The most fun you can strap to your head.



Soccer Shoot Out

Chris Holmes and Simon Rockman take a look at the football games now available and find a huge number of own goals

WITH the soccer season now well under way all the controversial headlines our national sport generates has woken the Amiga to soccer fever. Commodore's skill at choosing the most expensive team to get relegated seems to be reflected in the left-footed offers on silicon. While Chelsea battles away in the second division most of the games available make my efforts in the park on Sunday seem respectable.

Peter Beardsley's Soccer
Publisher: Grand Slam
Price: £19.95

GRANDSLAM, wishing to capitalise on the euphoria associated with the European Soccer championships, released this game during the final week of the contest. By having the most expensive player in Britain endorse the game they believed they were on to a winner.

They might as well put money on Chelsea. Both Peter Beardlsey and the game which was endorsed by him were completely off form. England's performance in the championship was similarly abysmal, although you can't really blame Grand Slam for that.

Peter Beardsley's Soccer on the Amiga suffers from not being finished. The gameplay is weak and the multitude of bugs infuriating.

The graphics are well presented and the scrolling very smooth, but the game lacks substance. The sound effects are annoying – thankfully the dire rendition of the Match of the Day theme tune can be turned off.

I think I could have just about tolerated the weak gameplay and the awful sound effects if the game had a little more variety and bore some relationship to the sport, but it hasn't. Penalty shooting and sliding tackles are just two of the myriad missed opportunities. International Soccer on the 64 is better.



Peter Beardsley's Soccer

Football Manager 2
Publisher: Prism
Price: £19.95

FOOTBALL Manager was first released on the ZX 81 seven years ago and is still in the charts. It instantly became recognised as a classic in computer entertainment. Now, after an endless list of conversions, the follow up has arrived. Football Manager, Kevin Tomms' original masterpiece, never made it to the Amiga. Never mind though, the follow up is even better.

Football Manager 2 is a strategic exercise in football management. You start the game as a division four manager. Having selected the team you wish to manage you are then presented with a sponsorship deal. This usually guarantees £500,000 in cash to be used on transfer market. The game revolves around selection and trading players.

By rotating the squad so that no one player becomes exhausted or injured you will ensure that the team always performs well. This idea defies the golden rule of never changing a winning side. Despite this, Football Manager 2 is the best football simulation to be released for the Amiga. It is packed with great little touches. Try to win the domestic treble.



Football Manager 2

Soccer King
Publisher: Kingsoft (Germany)
Price: 49DM

SOCCER King from Kingsoft was released in Germany many months ago. Like Peter Beardsley's Soccer, it aims to capitalise on the wave of enthusiasm generated by the European championships. Soccer and the Amiga are big in Germany, so naturally the largest publisher in the Rhineland decided to put two and two together and made an eleven.

Following the unwritten rule of arcade soccer games, attention to detail is missing. Before you start, you choose to play against an opponent or the computer and specify the length of a game. There is no way to stipulate the strength of a pass or shot and no added features like penalty taking or sticking the ball inside your shirt and running with it.

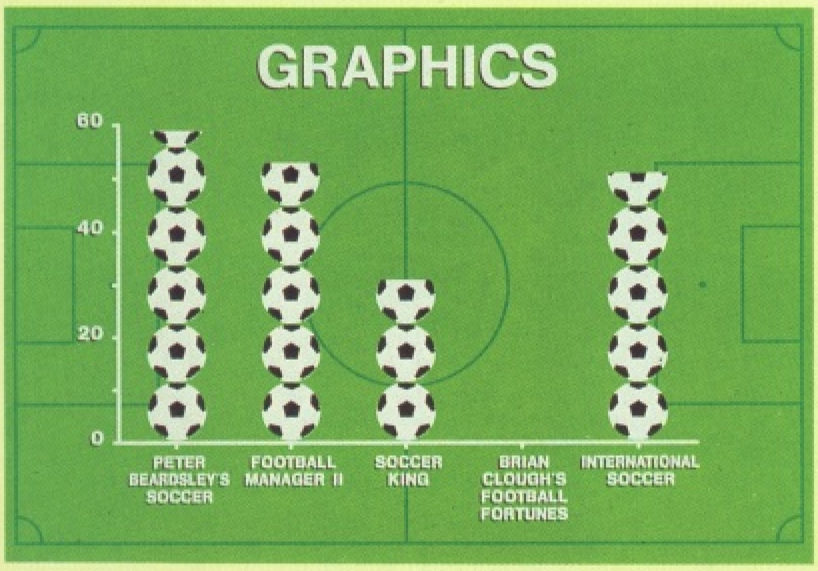
Soccer King is yet another attempt to copy International Soccer on the 64. The graphics and sound effects are extremely poor, the gameplay verging on absorbing, but as a two player game it almost becomes enjoyable. The appeal of the game is short lived – you soon realize that the shoddy graphics and weak sound effects fail to hide a rather drab repetitive game, worthy of Chelsea. Relegation bound.

Brian Clough's Football Fortunes
Publisher: CDS
Price: £24.95

A COMMON trick in publishing a successful game is to have someone very famous in the field add their name to it. The going rate for this is about £5,000 – depending on how famous the celebrity is and whether his team got relegated last year.

CDS has learnt this lesson. They don't come more famous than the outspoken Forest manager who has his name on its game... well, they do but you need to play football with your hands and get married to Sean Penn.

Football Fortunes was released a while ago and was well received. Calling Football Fortunes a computer game is something of a misnomer. It is really a board game with the computer acting as sophisticated dice. ▶





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You need at least two players – which rules out the Chelsea fan club – and the computer cannot be set up as an opponent.

There are no real graphics. From a list of options you can choose the players for your team and the name of the team. The computer then moderates the game, telling you who won each match and how much money you earned.

The game is very absorbing. It can be a bit messy setting up the computer on a table, but you will get so hooked you won't want to clear the table for tea. At the game's launch one journalist refused to leave for the free lunch because she wanted to do the double. It's simple, it under-uses the Amiga and it is great.

International Soccer
Publisher: Microdeal
Price: £19.95

MICRODEAL'S attempt at International Soccer on the Amiga is by far the best. The Amiga version has had all the bugs of the ST version ironed out.

Played either against the computer or a friend, each player has all 11 men to call on during the game. The fact that all 22 men are able to take part is a worthwhile novelty. With so many sprites on the screen its inevitable that the action will slow down when things get clustered, but to my surprise the sprite animation and the flow of the game do not suffer too drastically.

While without doubt the best of the soccer action game, at the same time it is a long way from being the definitive soccer simulation. If you are desperate for some good football action for your Amiga then give it a try.

WHAT WE WANT

As yet the awesome soccer game the Amiga deserves hasn't been written. Most programmers or designers really don't have a clue when it comes to creating a playable football game because most of them don't know one iota about the sport.

The solutions to this grave problem are, either Bryan Robson learns how to program the Amiga, Ocean converts Matchday II, or someone spends some time and money investigating all the features that make up the world's most loved sport.

Summary

Football fever may have caught the Amiga, but the vast difference in quality and style of the computer soccer games has also been made apparent. While none of the games featured are really up to scratch, Football Manager 2 represents the best value.

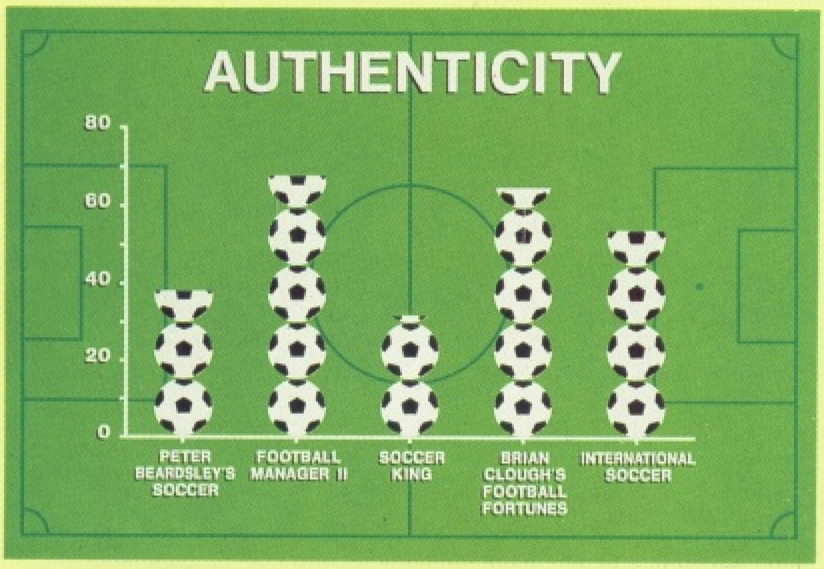
More such games are due in the next few months. Anco will be releasing an arcade football game as will Satory, the French company which advertised Hotball three months ago.

Mastertronic has the official licence to the F.A. Cup and it's a distinct possibility that Sensible Software's soccer game, recently bought by Microprose, will make an Amiga appearance just before Christmas.

My bet is that with all this activity Amiga gamesters will be celebrating a fantastic soccer simulation by the end of the new season and Manchester United will be celebrating their first league championship in 20 years. Chelsea might find that the third division is not only something to do with the House of Lords.

RATINGS					
Name	Graphics	Sound	Authenticity	Gameplay	Overall
Peter Beardsley	59%	23%	38%	12%	27%
Football Manager II	53%	54%	68%	75%	72%
Soccer King	31%	31%	32%	37%	33%
Brian Clough	0%	0%	65%	79%	68%
International Soccer	51%	57%	54%	53%	54%







From punk to programmer

Tony Selinger has married the music industry to the Amiga. John Minson went to interview him about the offspring

IT would take a black belt in lateral thinking to draw a connection between that punk Mecca the Roxy club and the bright and brilliant Amiga computer. Adding teeny-bopper chart toppers Bros hardly makes things easier.

The link is Tony Selinger, founder of Pure Graphics, whose PASE animation software is launched in September. To understand what relevance the primitive thrash of bands such as Generation X and the Buzzcocks has to high tech, and how two Amigas could help make the next Bros tour run as smoothly as silk, read on...

"I started in the music business 12 years ago", Selinger recalls. "You really have to graft your way up – I started putting speakers in cabinets" But punk was first raising its spiky head, and when the Roxy and then The Vortex opened up in London, Selinger got his first real job mixing sound for the bands.

"All the other guys were in their thirties, and their idea of heaven was Led Zeppelin, so they let me handle it". During this period Selinger met most of the leading punk bands, including Siouxsie and the Banshees, for whom he worked as main sound man for eight years, and Generation X, whose Tony James later re-worked the great rock 'n' roll swindle with the heavily hyped Sigue Sigue Sputnik.

Selinger survived the constant wall of noise, as well as the rigours of working as a road manager for a number of major acts, which kept him away from home for eight out of the last ten years. Eventually he decided that it was time to settle down, and as luck would have it this change of pace coincided with a friend, a project manager at Firebird, looking for a consultant to advise on a piece of Commodore 64 software, The Music System.

"At that stage Firebird was just two offices deep in the bowels of BT and nobody knew anything about music. They'd bought the rights to this program from Island Logic, which was already big on the BBC Micro". Selinger's contract was for a month, but in the end he stayed a year and a half, watching Firebird grow with the addition of Rainbird and Firebird Licensees – and gaining a taste for computers along the way. It was during this time that he bought his



Tony Selinger is a confirmed Amiga maniac

first micro, a C64.

Eventually the bureaucracy and back-stabbing of working for a big corporation got too much for Selinger and he left to form Pure Graphics. Around the same time Commodore launched the Amiga.

"I'm not sure why I woke up one day and decided on the Amiga. Perhaps it was because I've always had a lot to do with television post production and sound recording, and the facilities you pay for in a TV edit suite are vastly over-priced.

"There's an attitude in the TV and record industry that if it doesn't have three zeros after it it's a load of ..." he continues in uncompromising form. "I liked the idea of trying to convince people in TV that they could do it for a lot less – that they could do for less than £1,000 what they were paying £20,000 for."

This is a true Amiga freak speaking, but despite Selinger's enthusiasm he doesn't harbour unrealistic illusions: "No way would I say that an Amiga 2000 is as good as a Quantel Paintbox – a broadcast standard graphics system – but it made things I'd only dreamed of possible.

"There seems to be a reason to get behind the Amiga. When I started with Firebird some of the games on the C64 were very good. When I left they were amazing. We're only one sixth of the way into what the Amiga can do".

WHILE Selinger's primary interest is personal productivity software, he has touched on other areas. During Sigue Sigue Sputnik's period of fame there was much talk of a tie-in game, which was even advertised between tracks on the band's album. Selinger found himself acting as middleman for that project. "I saw a link between the music business and computers, but they're actually completely different audiences".

Selinger still believes that there are ample opportunities for cross-marketing though, a belief which is supported by events which followed the SSS affair. He was talking with the director of children's television show Get Fresh, who wanted a segment of the programme using a computer game. Selinger said that he could provide a specially written game which would appear on the show before being sold commercially.

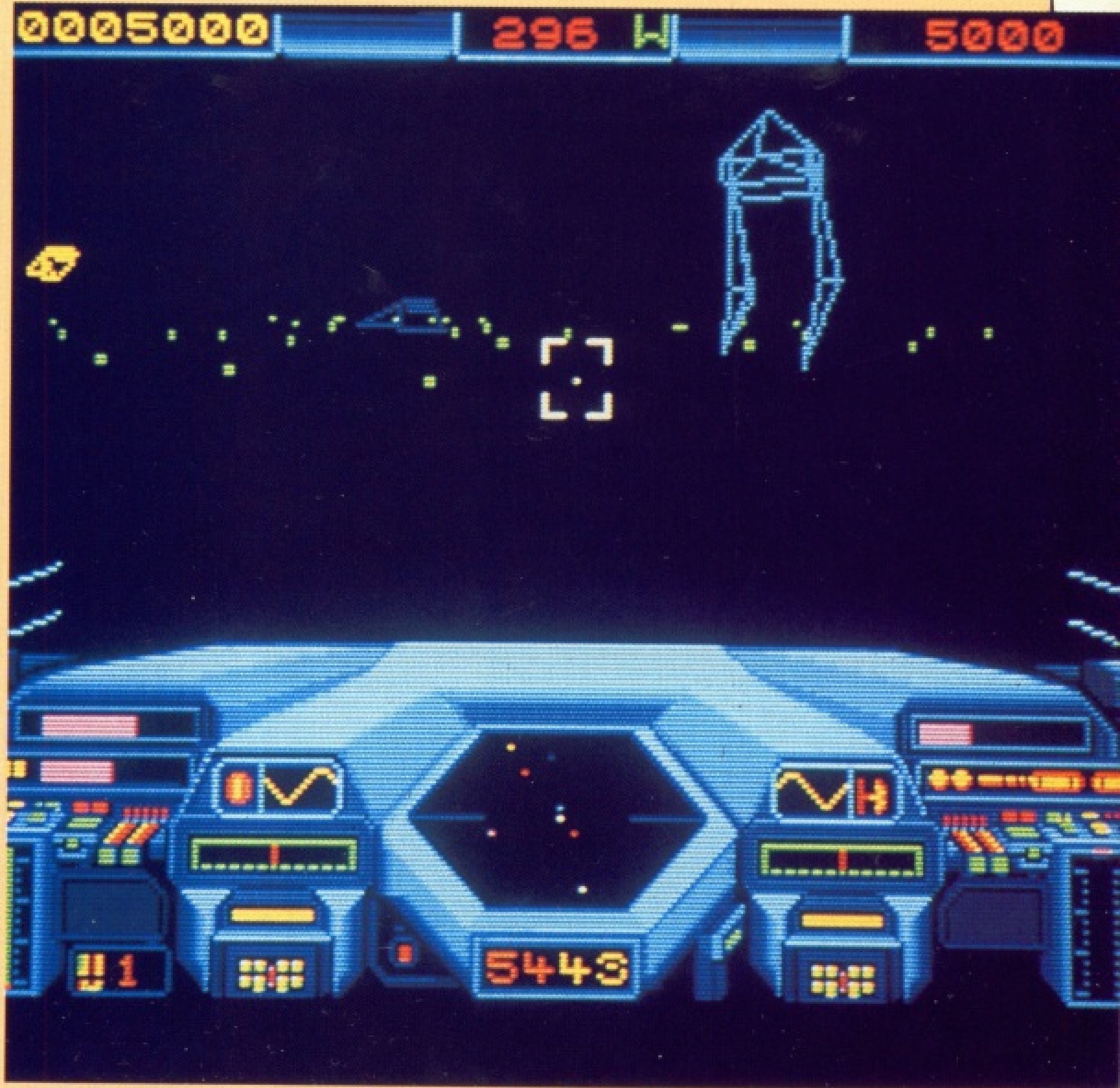
In typical television fashion, he heard no more about his proposal until he received a phone call from the show's new director who wanted to know if he could have a game ready in time for the first programme. When would that be, Selinger wanted to know. In three weeks came the answer. Having explained that it took slightly longer than that to write a game from scratch, Selinger put on his thinking cap and came up with the idea of using an existing game which he knew from his Telecomsoft experience – namely, Starglider.

LUCKILY it was possible to make the alterations necessary to turn the highly sophisticated, strategic shoot 'em up into 50 seconds of frantic blasting, which is how the Amiga made its way into Get Mucky, so called because the game's loser got dunked in the gunk. Selinger likes the juxtaposition of state of the art technology and good old low tech grunge!

Get Mucky was a flippant use of all that powerful processing, but it had one serious effect. Selinger's fee allowed him to fund the development of the animation and graphics utilities he had been dreaming about. His experience of an expanded Amiga with DeluxePaint, DeluxeVideo and Aegis Animator convinced him that there was another approach to these applications which nobody else had tried.

"They wouldn't do what I wanted, good as they are. So I started to experiment with a public domain program, Framer, which lets you animate 12 frames created with a standard graphics package, just like a flick book. The other animation packages of that time used geometric shapes and precluded freehand drawing, but this allowed the user's creativity to be in touch with the computer's number crunching".

Using the profits from Get Mucky ►



Starglider: How the Amiga made its way into TV's Get Mucky

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Selinger was able to fund the programming of his idea by Lee Gibson, a Leicester-based coder who he contacted through the Amiga User Group bulletin board. "He had always wanted to program the machine but had a full time job. We made it possible for him to form Digigraphics, which has also done work for Eidersoft. Both he and his partner are fast, effective programmers. They'll go far".

The result was PASE – that's Professional Animation Sequence Editor – which has been picked up by Precision Software and should be available for around £50. "We had a lot of interest in it, including Electronic Arts, but I felt that Precision were the right people to handle it".

Selinger gives me a quick demonstration of PASE's capabilities, starting with its tightly-packed front end control panel. The program cleverly stores the differences between frames, rather than each individual picture, to maximise memory. You can then control the length of time each frame remains on screen, adding delays wherever required. You can also insert auto-repeats and loops, to create the sort of "video scratching" effects which are so popular nowadays.

The two sequences that Selinger shows me are both impressive. The first is a classic cartoon of a running figure which shatters the preconception that computer animation is best suited to geometric effects. His other demonstration is a digitised picture of a Sumo wrestler, whose warm up routine turns into a stuttering boogie with the addition of a few well-chosen loops. The package is so effective that Selinger has already used it to produce short animations to be used on the video screens of that trendy South London nightspot, The Fridge.

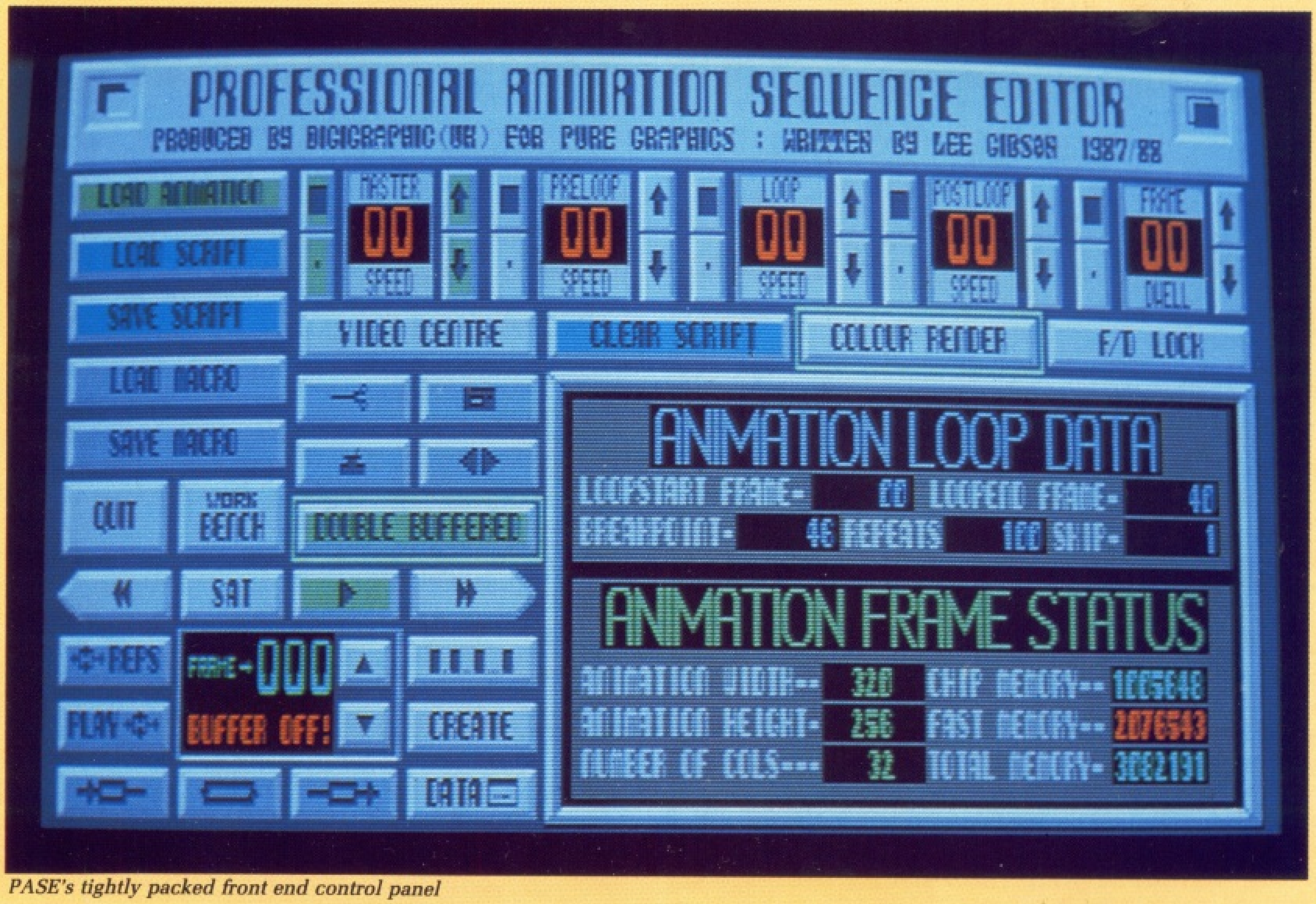
THE company's ingenuity doesn't stop with software. If you've watched Channel 4's ultra-hip Network 7, the chances are you'll have seen images produced with the help of Pure Graphics Combiner. Used with the Digi View digitiser it allows you to frame grab colour images from video for around £100, which is far cheaper than comparable products, and offers better performance to boot.

Selinger hasn't been directly involved with the music scene for some time now, but earlier this year he was tempted back by the offer of looking after the computers on the Bros tour, even though they were Atari STs. "I'd never learnt much about Midi but a three weeks tour seemed a good chance to get to grips with it. I reckon that I know everything now".

While Selinger is tactful about the trio ("They're competent musicians," he says, "with some very good session men backing them.") it is obvious that sequencers, controlled by a 520 ST, play a great part in making the live performance sound like the records. But for the next tour the Ataris will be replaced by Amigas.

"One of the most difficult things with a show like theirs is timing the lighting effects, especially if the lighting designer is giving instructions to a follow spot when there's supposed to be a blackout." Selinger

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PASE's tightly packed front end control panel

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is currently working on using one Amiga for Midi with the other attached to the RS232 port of the lighting desk.

He plans to use the Dr T sequencing software, with a few modifications of his own. "It's difficult to develop systems like this commercially, because you can't predict the market", he says, "so it's best to get an end user to finance it, just as Bros is doing".

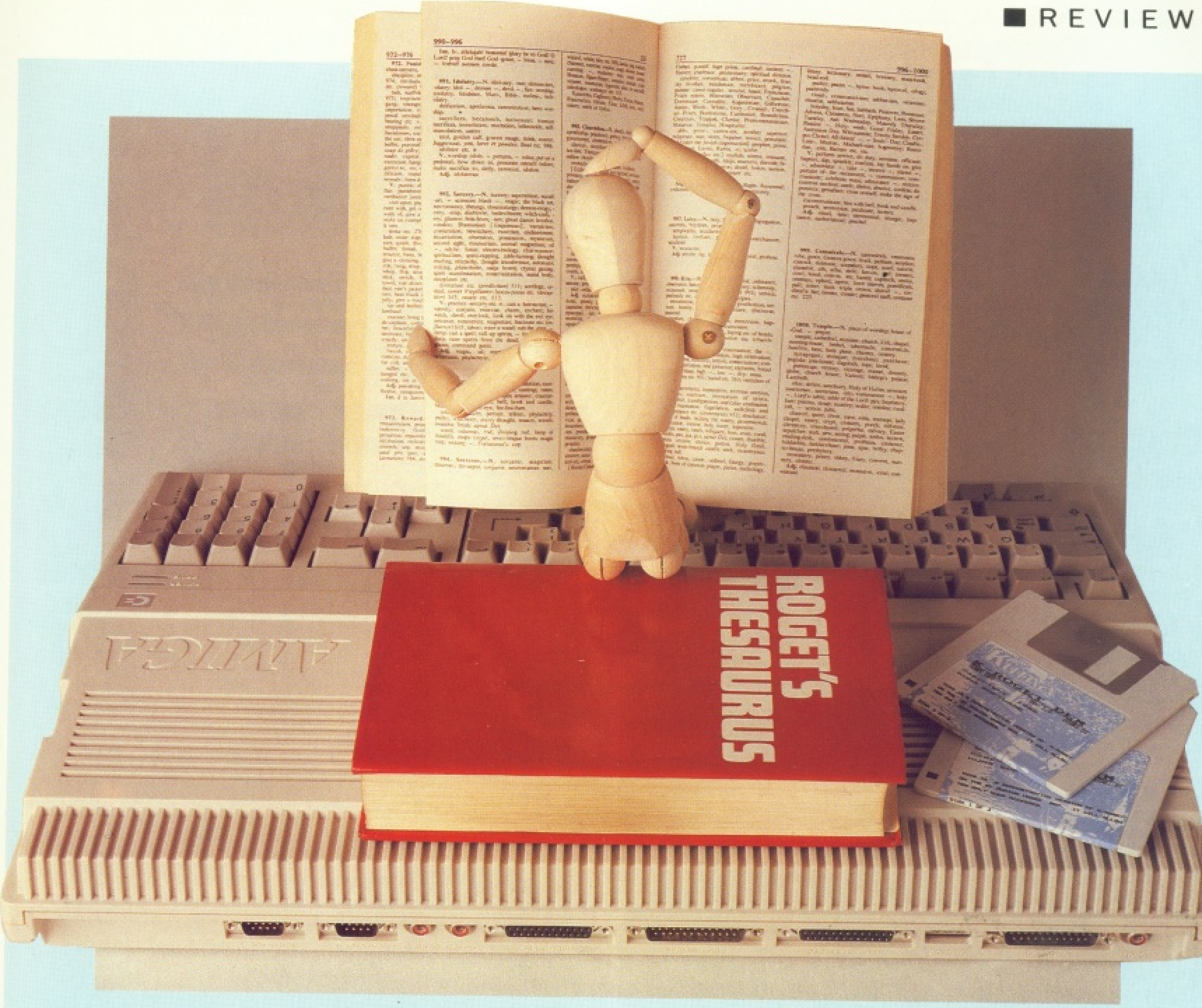
Behind all these projects lies Selinger's philosophy of the importance of creativity, a belief which encompasses both the financial and physical aspects of making something. "Anything that stimulates people to do something creative has to be good, and the Amiga provides ample opportunities for creative entertainment.

"It's far easier to create with a computer than to sit down with a guitar. If you sit down and strum three chords you cannot be the new Bros or Wet Wet Wet. But it's easier to be mildly creative with a micro", he elaborates. "And the costs of commercial computer animation means that there's a sort of 'entrance fee' that ordinary people can't afford if they want to get into it. It's elitist when it should really be for the people with the right ideas.

"Everything that Pure Graphics does lets people be creative. But it lets them do it without realising it. There's no stigma of being an 'artist' attached". Selinger is the first to admit that this is a sophistication of the old punk philosophy which said you could form a band and make a noise, even if you couldn't play.

The secret is that using an Amiga you can quickly progress beyond three chord thrash to sophisticated results which compare with those of the professionals.





DON'T TURN THE PAGE

The film of the book, the game of the film. Clive Pedmore looks at the program of the book

BEING lost for words is a horrible experience – a state I frequently seem to find myself in. Not any more. With my Amiga loaded and primed with K-Roget there are thousands of words waiting to be discovered, found, located or just uncovered.

The English language is rich in words and phrases which convey the same meanings – the problem has always been knowing them. In days of old there was the standard tome, text, folio, manuscript, known as Roget's Thesaurus, which had cleverly linked lists of all important synonyms.

But it was too much like hard work to use it frequently, and anyway overuse only seemed to encourage the important pages to become detached from their colleagues and fall out.

Better to leave the book well placed on a shelf, where it could serve to impress friends and visitors.

Computers are far better at sorting through lists of data and displaying a relationship, and to this end Kuma has packed the contents of Longman's Pocket Roget's Thesaurus on to disc, so you can set the power of your Amiga on the weaker parts of your vocabulary.

Actually, K-Roget comes on two discs – which is bad news for A500 users who have only one drive. In fact the accompanying notes that came with the program suggested that those wanting to use the software had better have, or get, a hard disc if they want to lead a frustration-free life.

With a hard disc, installing the software is a matter of copying over a few files and adding a couple of assign lines to the startup sequence. When will producers of business-like software start to incorporate a utility which automatically installs their products?

Using the program is pretty straightforward, simple, easy, clear, lucid. Suppose that I want to replace the word easy. First type it into the edit line and press Return. After a very short delay a list of words appears in the list box. There are

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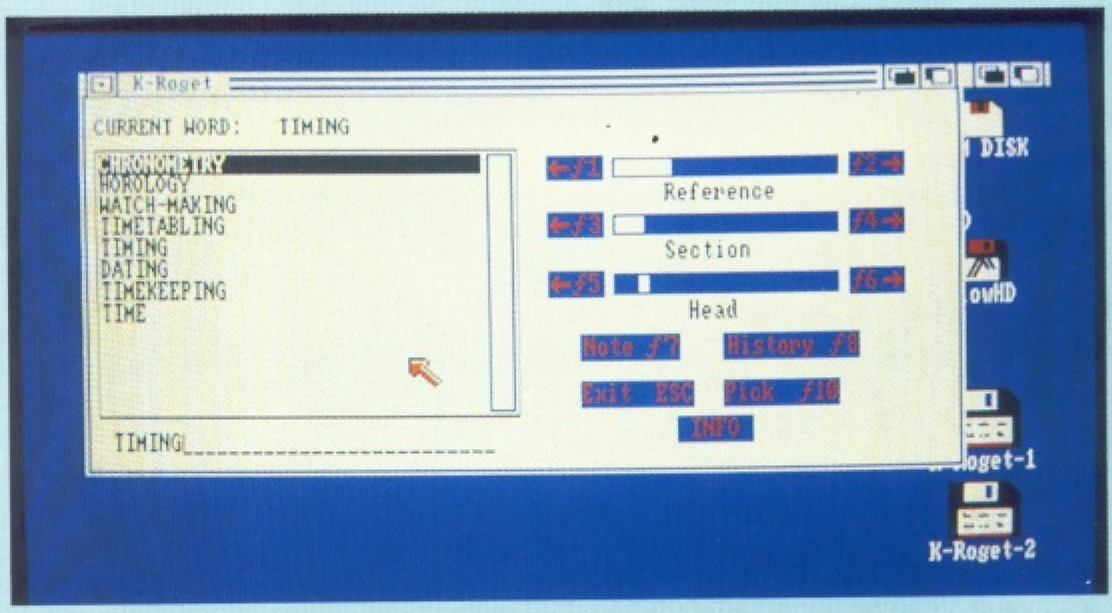
more words than can be displayed but I can scroll down the list by dragging the menu bar or by using the cursor keys.

The first list displays words like sloping, uphill, rising; not really the same easy I am thinking of. By clipping on the bar called Reference I can search through the other meanings of easy. The next reference delivers such words as comfortable, homely and snug. Still not right, so click on References again. The third paragraph produces intelligible, understandable, coherent. References once again produces yet another set of alternative meanings for easy; effortless, undemanding, not hard, possible and so on. That's much more like the type of easy I was looking for.

The concept behind the other two slide bars is a little more tricky to grasp. Take the word wildlife, which has only one reference – it has only one generic interpretation – although there are seven synonyms for the word like animality, animal life, fauna and so on. While there are no alternative references there are lots of alternative sections, which are related to the general heading of wildlife.

Clicking the Section bar brings up a list of headed Animal followed by a whole series of synonyms for animal. Another section comes up with the heading Mammal, followed by a list of mammals. Get the idea?

The head slider bar allows you to explore completely different concepts



After a short delay a list of words appears in the list box

of wildlife. Again, looking at wildlife under different heads comes up with lists headed by mineral – if you move the slider in one direction, or vegetable life in the other. Using the head slider helps dig up a wealth of antonyms.

If you type in a word or phrase which is misspelt K-Roget will attempt to match it against a list. In this manner it can act as a sort of crude spell checking device – crude because it won't search for words spelt phonetically.

This is a powerful tool. Two things particularly impressed me about it. To start with you are not limited to searching for single words as you are with similar programs, K-Roget manages complex phrases easily.

Secondly it has a wealth of data to draw on, the adverts claim 150,000 words and phrases.

My only criticisms are that there is no simple way to paste words from K-Roget into your favourite word processor, and while the program itself may not be short of the words, the manual certainly is.

Without a doubt K-Roget must be the best thesaurus on the Amiga. It is, however, a bit expensive, compared to the book for just the occasional use, but £49.95 could be justified by a full time user.

REPORT CARD

K-Roget
Kuma 07357 4335
£49.95

USEFULNESS ....
The huge vocabulary goes some way to ease the pain of having to re-type words.

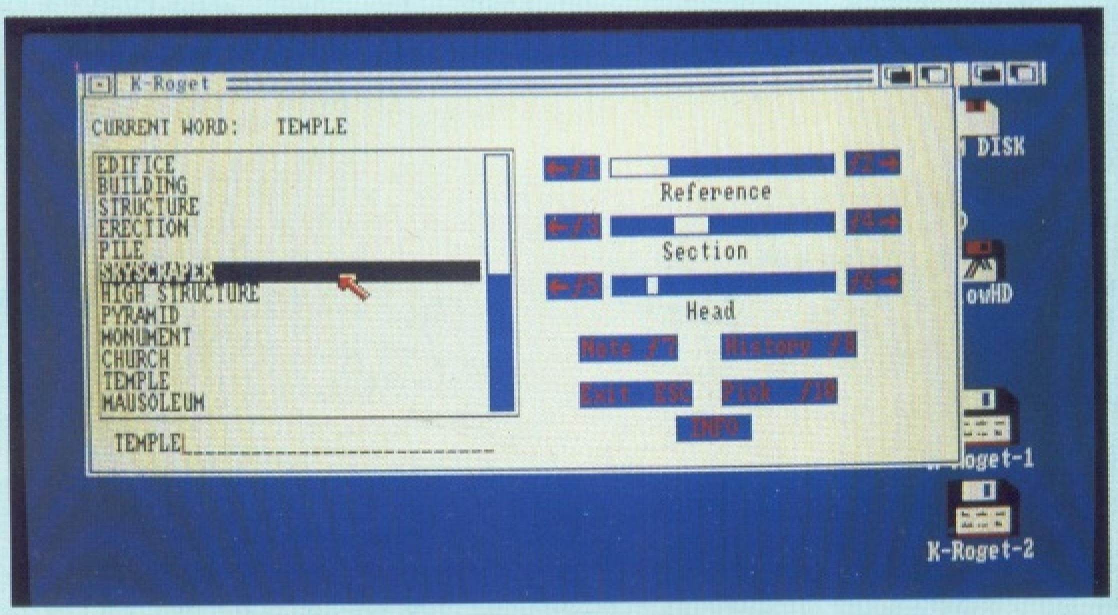
EASE OF USE.........
On a hard disc system K-Roget is a joy but even dual floppy users may not find it worth the hassle of swapping discs.

INTUITION............
Fully integrated and multitasking.

SPEED.....................
Faster than thumbing the paperback but not really 68000 super fast.

VALUE ....
Exchanging a picture of Florence Nightingale is a bit difficult to justify for just a Thesaurus.

OVERALL *64%*
A solid program which would sell very much better at a lower price.



K-Roget has a wealth of data to draw on



Testing time for Ariadne

We looked last month at what interactive video has to offer the world. Now John Carter looks at the Ariadne implementation in detail

MICROTEXT and the Video Player Driver from Ariadne are aimed at a specialist market, computer based training (CBT) and interactive video (IV). It is a growing field, and one in which the Amiga excels.

AAAE, which you can't say, stands for Ariadne Amiga Application Environment, which you can't remember. It is aimed at training organisations which probably won't have seen an Amiga before and so it has to be simple to use. It's successful and I'm very impressed.

Learning to use the system is as much a lesson in handling the Amiga's multitasking as it is in learning about Microtext. The software will support a number of videodisc players which can be selected from Workbench.

The player control icon puts Workbench on the rear screen and a moveable control panel for the player at the bottom of the new screen. A small window reminds you to switch on your player and after a few seconds you can use the mouse to press the keys on the control panel and start watching video.

For the next stage the video can be distracting, so use the control panel to switch the pictures off, then flip the panel to the rear screen. This ensures that you can see the window for the AAAE Microtext disc. Click the

AAAE icon, which loads a Microtext window in the left half of the screen. This remains empty until you run a Microtext module, when it displays the text or graphics you want the user to see.

Microtext programs are made up of a series of smaller programs, called modules. These are written using MicroEmacs, the text editor, which now comes on the Extras disc with new Amigas. While you're writing a module, you still have Workbench, the videodisc control panel and the Microtext window available on other screens. If you're unsure of videodisc frame numbers you can switch to the controller and run some video with frame numbers displayed.

When you've finished your module you save and switch back to the Microtext screen. A pull-down menu enables you to load your module into the Amiga and you're ready to run it. Video plays on the whole screen and shows through the Microtext window, so it's best to put a coloured background behind Amiga text. Microtext gives error messages about your programming. If this happens, you can start editing without stopping the program.

YOU can have a Microtext edit window on the right of the screen or you can switch screens back to MicroEmacs. The first is less flexible for editing than the latter, and caution is required. The Amiga's multi-tasking means editing in Microtext can cancel out MicroEmacs alterations, so remember to save changes you make with the Microtext editor *before* you go to Emacs. The video commands need extra care, because they're independent of Microtext and can cause it to hang.

The Ariadne software has some very useful goodies. The Map Editor allows you to take an IFF picture and draw outlines round parts of it. Each part can have assigned text, so that when the users point to that section of the picture the appropriate text is displayed. There's no reason why this couldn't work on a stilled video picture. A notable omission is a Renumber facility, as in Basic, to tidy up a much-edited program without losing its inter-relationships.

Documentation is always difficult to evaluate, and the problem was exacerbated because I had prior knowledge of Microtext and simply didn't need it very much. It was also



Programming with the editor

incomplete, the missing bits being included in ReadMe files.

The loose-leaf manuals had tutorials, but no indexes, and the mainly black packaging cried out for graphics expressing the colour and vitality which the Amiga and Ariadne's software can generate.

There were some sample modules on the AAAE Microtext disc, but I'd like to see more. Knocking them off must be like falling off a log for Ariadne's programmers, whereas some Microtext routines can be like splitting the atom for many of their customers. Unfortunately, designing and producing an IV program seems to take around a couple of years, so we're going to have to wait if we want to see the software pushed to its limits.

Ariadne recommend a 1Mb A500 as the minimum configuration for the software. I used a 512k A1000 with an external 2Mb expansion. With the ram board out, my machine soon felt ►



The control panel makes driving the video easy

like I was driving it with the handbrake on. I eventually ground to a halt behind an immovable Microtext window.

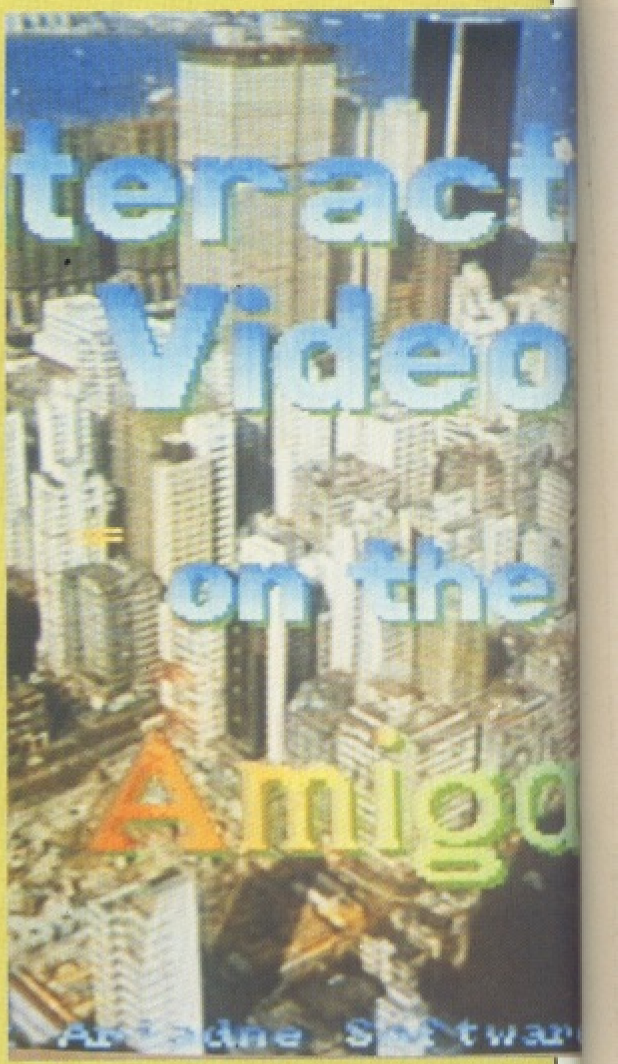
The software is supplied on two 3.5in discs, one for Microtext and one for the Video Player Driver, which are available separately. Ariadne either provides a special Workbench disc or the instructions to modify your own. The video player device also supports U-Matic Mk 9 videotape machines and has applications other than IV. It can be programmed in C, Amiga Basic or via AmigaDos.

So the Amiga makes it possible, and Ariadne makes it happen. They've exploited the Amiga's special abilities beautifully with this software and deserve to succeed, but time isn't on their side.

Money is being thrown at the IBM PC to make it more like an Amiga and the Acorn Archimedes is being promoted hard to education on free videotapes produced by the BBC. Ariadne's software is expensive, reflecting the considerable development costs, and it needs a special marketing effort to get it noticed in the right places. I'm afraid that it's unlikely to be enough for Commodore to discount the B2000 to education – it needs to promote the machine and its software as well. A good start would be to loan a B2000 and Ariadne's software to NIVC, where it will be seen and used by people looking for advice on how to set up projects to produce IV.

A few months ago a conference was held to review the progress of NIVC-sponsored IV projects running on BBC Micros in education. There was plenty of evidence of the Beebs failing to measure up and in the summing-up session one of the platform speakers said: "The fact is, we don't have the tools to do the job". He wasn't contradicted. Can Commodore afford to miss this opportunity?

Microtext costs £500 plus VAT, the Video Player Driver costs £350 plus VAT. For more information contact Ariadne on 01-960 0203.



Reasons to be cheerful

John Walker runs his text through a program which does a good deal more than just check your spelling

MOST writers yearn for a dream computer, something to act as a cheap substitute for the perfect secretary. A computer that could take their mumbled, hesitant words and turn them into elegant and flawless prose, containing neither grammatical errors nor spelling mistakes.

Alas, not even the Amiga can yet deliver such a miracle. In the meantime, The Other Guys' Reason, described as a professional proof reading program, makes a good substitute.

Probably the best program of its kind available for any micro, it has only one major drawback – its cost. At $395 it is expensive enough to have frightened off British distributors.

Reason consists of five separate analytical programs, accessed from a main menu. Best used with documents containing at least 2,000 words, it works quickly. Its proof-reading program took five minutes to report on a document containing 8,820 words.

In that time it checked for spelling, diction, punctuation, double words and split infinitives. That may not seem a lightning speed, but I was using it on a chapter of a travel book containing more than 300 placenames as well as foreign words and phrases.

Trying to use the built-in spell checker of my word processor – the excellent WordPerfect – was a nightmare, since it came to a grinding halt at each name. I estimate that it would have taken at least an hour for WordPerfect to spell check the document.

REASON does not correct spellings – it lists in alphabetical order the words its dictionary does not recognise. In this instance, it came up with 500 mainly foreign words. The only English ones listed involved non-American spellings, such as flavoured, and those containing apostrophes, such as women's. It took a further 150 seconds to check and print a report on the document's style. Such reports can be sent to a disc file or the screen as well as to a printer.

Reason comes on two unprotected discs accompanied by a good, comprehensive manual. Its one irritating feature is that it does not allow multi-tasking. You have to boot it either by resetting the computer or putting in the program disc at the Workbench prompt. The only way to quit the program is to reset the Amiga.

It is set up to judge two types of document – instructional texts, which would seem to cover most factual prose written for a general audience, and technical or scientific reports. Your prose is compared against standards set by America's Bell Laboratories, from whose Writer's Workshop software much of Reason is derived.

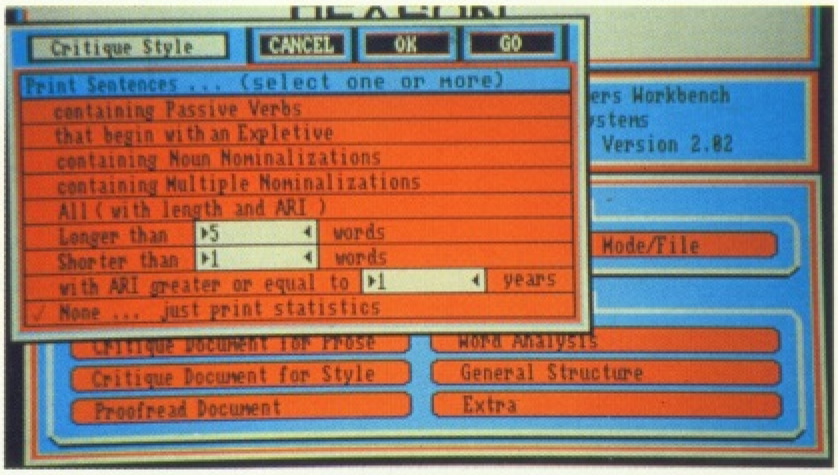
And what if you don't think much of Bell Labs' judgement? You can customise the program to set your own standards of comparison. You'll need at least two documents to create a customised standard, though the manual suggests that for best results you use a minimum of 20.

The first step in using Reason is to obtain a general analysis of the text, which includes a readability rating so that you can discover whether your readers will be able to understand what you have written. From this analysis you can also see what parts of your document need working on.

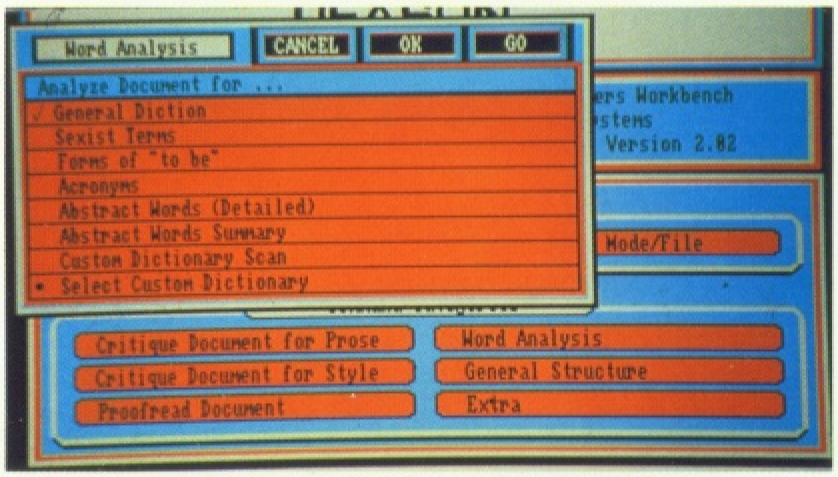
The program checks on such hindrances to understanding as the use of passive verbs, nominalisations (nouns created from verbs), and expletives, which aren't, as you might think, those words beeped out on TV, but redundant expressions such as "There is" or "It is".

It also suggests alternatives. When I

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The Critique Document for Style menu



The Word Analysis menu

```
BECAUSE YOUR TEXT IS SHORT (< 2000 WORDS & < 100 SENTENCES),
 THE FOLLOWING ANALYSIS MAY BE MISLEADING.

 ]NOTE: Your text is being compared against standards derived
 from 34 instructional texts produced by Bell Laboratories.
 READABILITY:
 The Kincaid readability formula predicts that your text
 can be read by someone with 10 or more years of schooling,
 which is a good score for documents like this.
 VARIATION:
 You have an appropriate distribution of sentence types.
 You should, however, consider shortening the average
 sentence length. This average is 21 words, which is high.
 A good average would be 15 to 20 words.
 The longest sentence, however, is 61 words long.
 Sentences this long are frequently lists, which will be
 easier to follow if you convert them into a list format. To
 find all your sentences over 50 words:
 1. Select the REASON menu option "Critique
 Document for Style"
 2. Select the sub-option, print sentences
 "Longer than" 50 "words".

 ]SENTENCE STRUCTURE:
 Passives and Nominalizations:
 You have appropriately limited your use of passives and
 nominalizations (nouns made from verbs, e.g. "description").
 PROSE OUTPUTS:
 Options:
 You can request that your document be compared against
 different standards by:
 1. Selecting the REASON menu option "Critique
 Document for Prose"
 2. Selecting the appropriate sub-option.
 Statistics:
 The table of statistics generated by the "Critique
 Document for Style" can be printed. To look at the table
 select the "None...Just Print Statistics" from the
 "Critique Document for Style."
```

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]ORGANIZATION:
 The PROSE program cannot check the content or

]organization of your text.
 You can use the organization program to look at the
 structure of your text. This menu option will print the
 first and last sentence of each paragraph in your text so
 you can check your flow of ideas.
 To view the organization of your text:
 1. Select the REASON menu option "General
 Structure"
 2. Select the sub-option, "General
 Organization."

 ]readability grades:
 (Kincaid) 10.4 (auto) 10.9 (Coleman-Liau) 9.9 (Flesch) 10.3 (58.3)
 sentence info:
 no. sent 48 no. wds 1027
 av sent leng 21.4 av word leng 4.60
 no. questions 1 no. imperatives 0
 no. content wds 590 57.4% av leng 5.96
 short sent (<16) 35% (17) long sent (>31) 21% (10)
 longest sent 61 wds at sent 48; shortest sent 4 wds at sent 30
 sentence types:
 simple 54% (26) complex 37% (18)
 compound 2% (1) compound-complex 6% (3)
 word usage:
 verb types as % of total verbs
 to be 25% (27) aux 26% (28) inf 16% (17)
 passives as % of non-inf verbs 10% (9)
 types as % of total
 prep 11.3% (116) conj 3.2% (33) adv 4.1% (42)
 noun 25.9% (266) adj 18.5% (190) pron 7.1% (73)
 nominalizations 1 % (13)
 sentence beginnings:
 subject opener: noun (10) pron (13) pos (3) adj (5) art (5) tot 75%
 prep 10% (5) adv 6% (3)
 verb 0% (0) sub_conj 4% (2) conj 4% (2)
 expletives 0% (0)
```

Reason's critique of this review, using the Critique Document for Prose and Style options.

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tried it on a sample document included on the Reason disc, it advised replacing the phrase "give an indication of" with the verb "indicate" and, when "indicate" was used in the next sentence recommended substituting "show" or "suggest". You can add a custom dictionary of words you misuse, together with a suggestion file containing an alternate word or phrase to substitute.

Reason will also list sexist references, though this is of little help since it does not take the context into consideration, merely querying to the use of such words as "man" or "woman". It will, if asked, print out any problem sentences and also provide a word by word parsing of your prose.

Checks for structure include a listing of the 20 most frequent noun or noun-adjective combinations in the text so that you can see whether these often-mentioned subjects refer to the main topic of your document. The list can also be a help in creating an index.

No program, of course, can turn a bad writer into a good one. But Reason is a most useful aid for making factual texts as clear and unambiguous as possible. It will pick up errors of grammar and style as well as of spelling, making suggestions for improvement – which, of course, you are free to ignore. Any organisation wishing to establish a house style, or aiming at a particular reading age in its audience, would find it a perfect tool for creating a standard by which its writers could be judged.

I'm grateful to Joseph S. Nielsen, president of The Other Guys, for the loan of a copy of Reason. I miss it since I returned it. If it were cheaper, I would rate it as an essential aid for anyone who writes for a living. Along with the now debugged WordPerfect, it makes the Amiga an ideal word processing computer.

Reason is published at $395 by The Other Guys, PO Box H, Logan, UT 84321, USA.

REPORT CARD

Reason
The Other Guys
$395

USEFULNESS
Excellent for anyone who has to produce documents of a reasonable length.

EASE OF USE
Simple drop down menus. The difficult part is understanding recommendations.

INTUITION
Needs the machine to be reset. Will not multi-task or return to Intuition.

SPEED
Takes a while to run but it does do a lot of work. The spell checker is rapid.

VALUE
Professional writers only, and they will probably wince at the price.

OVERALL *76%*

A creditable score for a product which deserves a wider audience.

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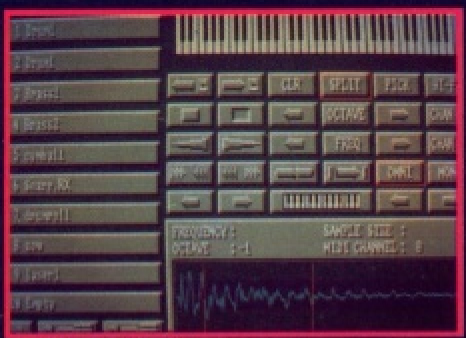


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Digital vision

Rupert Goodwins links his Amiga to a video and camera to produce some interesting effects

THE Amiga encourages big thinkers. Play with an art program for a day, and start thinking about your own video production company. The trouble is getting the pictures into the computer; unless you are possessed of exceptional artistic talents it's just too difficult to produce professional results.

A video digitiser might seem to be the answer to such a lack of talent. It's a box that takes video signals and turns them into computer readable files. Armed with one of these beasties and the ubiquitous video recorder, you too can capture Ronald Reagan and do to him what you will in Deluxe Paint.

If you've got a video camera it gets better – imagine digitising your favourite album cover and pasting your own name over the top. It's the perfect vehicle for ego trippers or those who get a kick from drawing moustaches on famous female politicians. I do.

The digitiser on the line this time is SunRize's Perfect Vision. SunRize is a Texan company, and Perfect Vision is a product for the American market. Physically, it's just a bit bigger than a second disc drive, and apart from the two big black knobs on the front could pass as such in a dim light.

Enclosed in a strong beige metal case, it sports three sockets at the back – printer port, 9-way D and video in – and an on/off switch. The printer port is used to send a picture to the Amiga; the 9-way D connector provides control signals for a motorised colour filter – more on this anon – and the on/off switch is just a nice touch.

Inside the box is a neat, well laid out circuit board with lots of chips. They're all standard function, except for the three most interesting types which have their names scratched off. However, it doesn't take great digital prowess to predict that they are memory chips and the digitiser chip itself. Removing the names might make it difficult to get the thing fixed over here should it go wrong, but construction is good enough to make this unlikely.

SETTING the thing up is simple enough, Unplug your printer, and plug the cable into the digitiser – you can't have both connected at once, sadly. Then hook up your video source – camera or VCR – to the video socket, plug in the power and boot the software on the Amiga. The video socket is the American standard ▶

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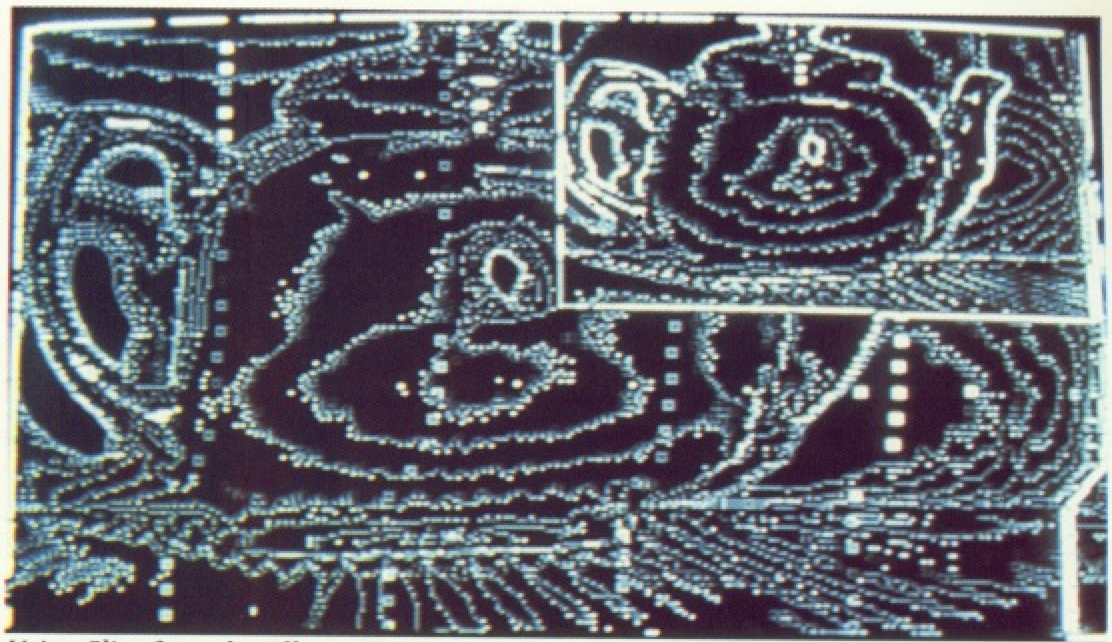
RCA – we call it phono – connector. Over here BNCs are more common, but adaptors are easy to come by in your local Tandy.

The software is quite simple. A menu bar with Cycle, Effects, File, Color, Options and Quit headings. On this, as with the other menu options, pressing F10 turns the bar on or off. Cycle is a good place to start; clicking on this either flashes up *No video signal present* – which means check your connections – or drops you into another menu with Exit, One, Four and Record as your choices.

At this point, whatever the camera or VCR is producing will appear on the screen, changing twice a second – everything taking on the appearance of Max Headroom (remember him?).

Setting the controls is quite tricky but gets better with practice. The two knobs are brightness and contrast, and they operate almost but not quite like those on a TV. The manual recommends that they both be turned up full blast, and the contrast backed off until a picture forms. Then the brightness can be adjusted until it all looks pretty. In reality, a bit more fiddling with both is then needed until the result is OK.

Clicking on One – the entry condition – gives you a full screen rendition of your digitised picture.



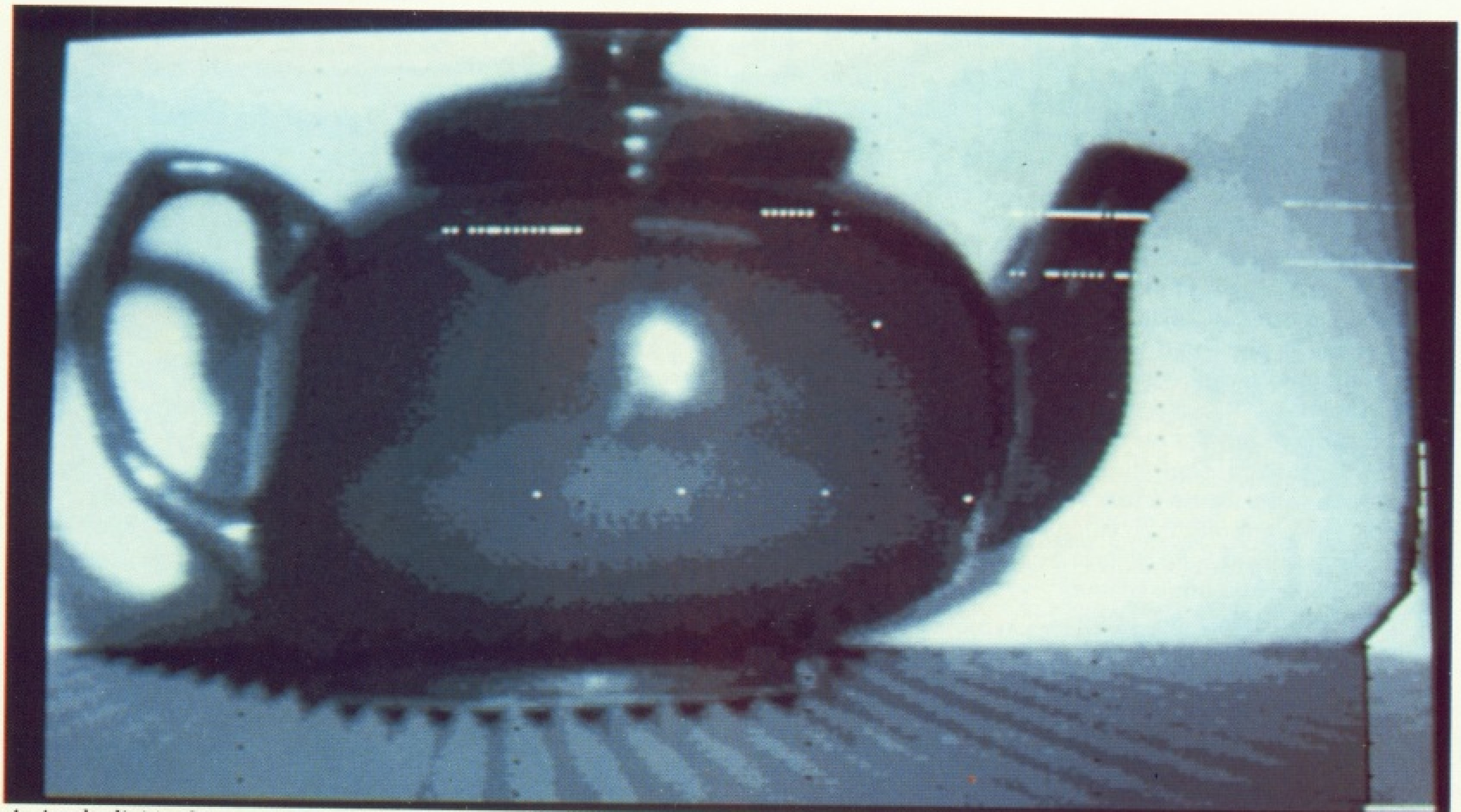
Using Slice from the Effects menu

Four splits the screen into small areas – guess how many – and updates each in turn. Record drops into yet another menu.

This lets you capture a series of pictures. Well, it does if you've got a memory expansion or an A2000; otherwise you're stuck with a couple at most. But those with oodles of ram can create short runs of pictures and step or cycle through them.

ONCE you've got a picture you're happy with, the software lets you do all manner of ungodly things to it. Under the Effects menu are a number of DSP functions. Digital Signal Processing lets you clean up, dirty down and generally mess with your image. There are five in all: Hist shows a bargraph of the overall levels of black, grey and white on the picture pretty useless but fun; Slice reduces the picture to black and white with no grey shading; Avg averages each pixel with its eight immediate neighbours; Sharp does the opposite and tries to heighten differences and Edge attempts to spot outlines and pencils them in white. It

►



A simple digitised image from a video camera



A false colour picture reveals more detail

also erases the rest of the picture.

Most of these functions are quite slow, taking several tens of seconds, and are of limited value; however for the experimentally minded there is a lot of fun to be had. And there's always the Undo function.

File is self-explanatory. As well as saving and loading stuff in IFF format it can use raw data. This is less compact than IFF – and tends to go off if you don't put it in the fridge – but lets you play around with pictures from AmigaBasic, or whatever, without having to understand the IFF technicalities.

There's also the possibility of creating an overscan picture where the screen borders are replaced with more picture data. The Perfect Vision software cheats; it doesn't produce a real overscanned picture but just stretches the old data.

The Color option is interesting. Like most other cheap digitisers, Perfect Vision doesn't attempt to capture colour video directly. Instead, the lucky owner is presented with three bits of coloured plastic – red, blue and green.

The idea is to put the red filter in front of the camera, store the picture, then do the same for the other two colours. The computer then calculates the colour content of the picture by adding together the three filtered pictures, and displays the results in either 32 colour or HAM mode.

It might sound a bit Red Green Blue Peterish, and in fact it's very difficult to make it work properly. The problems arise from the camera; most cheap black and white video cameras are designed to work in a wide range of lighting conditions and have automatic circuitry to compensate for the gloom of a late English evening.

So what happens when the picture you're digitising has little blue content? (No, not *that* sort of blue.) The camera thinks "Aha – the sun has set. Let's turn the brightness up a little". And in practice the digitiser sees far too much green and blue content; the results on screen can be garish to say the least.

Of course there are colour and palette controls, and with patience and a fair bit of time you can produce some very acceptable pictures. Just don't expect to get there at once.

The motorised colour filters mentioned earlier have the three colours on a wheel. Signals from the back of the digitiser rotate the wheel so that colour pictures are obtained automatically. I didn't have one of these to play with.

FINALLY, there is the Options menu. This contains the spare bits and pieces that, as the manual so frankly puts it, do not really fit into any other menu.

You can turn interlace on and off – only any good if you've got a decent monitor or are into instant headaches, do false colour pictures instead of the standard grey scale – fun for, say, pretending to do infrared body scans of the cat, or switch between fast updates of pictures or a slow fade.

Built-in software notwithstanding, I imagine that most people would buy a digitiser to import pictures into Deluxe Paint or similar. Is Perfect Vision up to the task? I think so.

However, I have two major gripes: Firstly, the 16 colours it chooses to use for its greyscaling include – as black and near-black – the colours used by Deluxe Paint for its menus. So, on importing a picture, all the Dpaint commands go away and you have to remember where they are until you can reset the palette – and ruin the picture.

Secondly, British standard (PAL) colour video signals do not capture well. Although there are differences in British and American TV picture standards, Perfect Vision copes with most of them well. However, it has a filter to throw away the colour information, and that is still set to the American (NTSC) frequency. The British colour signal gets through and causes noticeable patterning on the digitised picture.

NEVERTHELESS, Having had a fortnight's fun defacing politicians, newsreaders and cat food adverts, as well as stealing newspaper headlines and rearranging them, I can honestly say I'm hooked. Digitising is going to be the next big craze, and Perfect Vision is just crazy. I like it.

REPORT CARD

Perfect Vision
Amiga Centre, Scotland 031-557 4242
£199 inc. VAT

USEFULNESS
Unless you are a games programmer or a graphic designer a digitiser is of limited use. But it is still great fun.

EASE OF USE
Simple to set-up with pretty reasonable documentation, same about the external power supply unit.

SOFTWARE
Plenty of features but marked down for a bug in carousel mode which caused a reproducible crash.

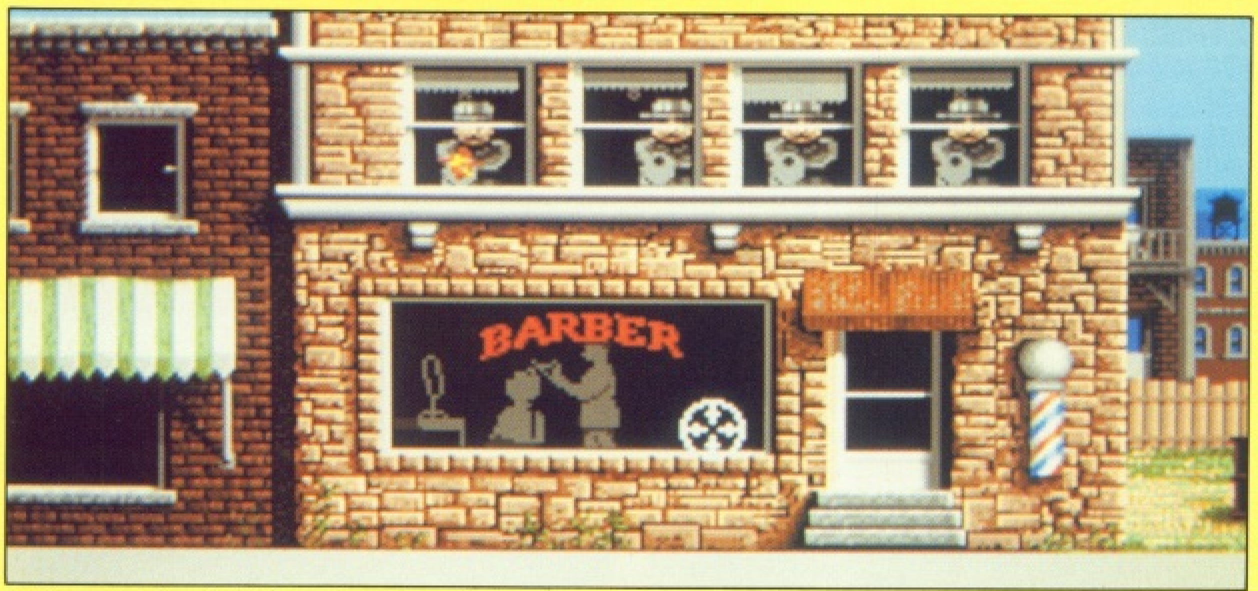
SPEED
As with the JCL Digipic, frames are grabbed instantly but take a while to appear on the computer's screen.

VALUE
Great fun and two thirds of the price of the Digipic rival. The NewTek DigiView is cheaper but offers fewer features.

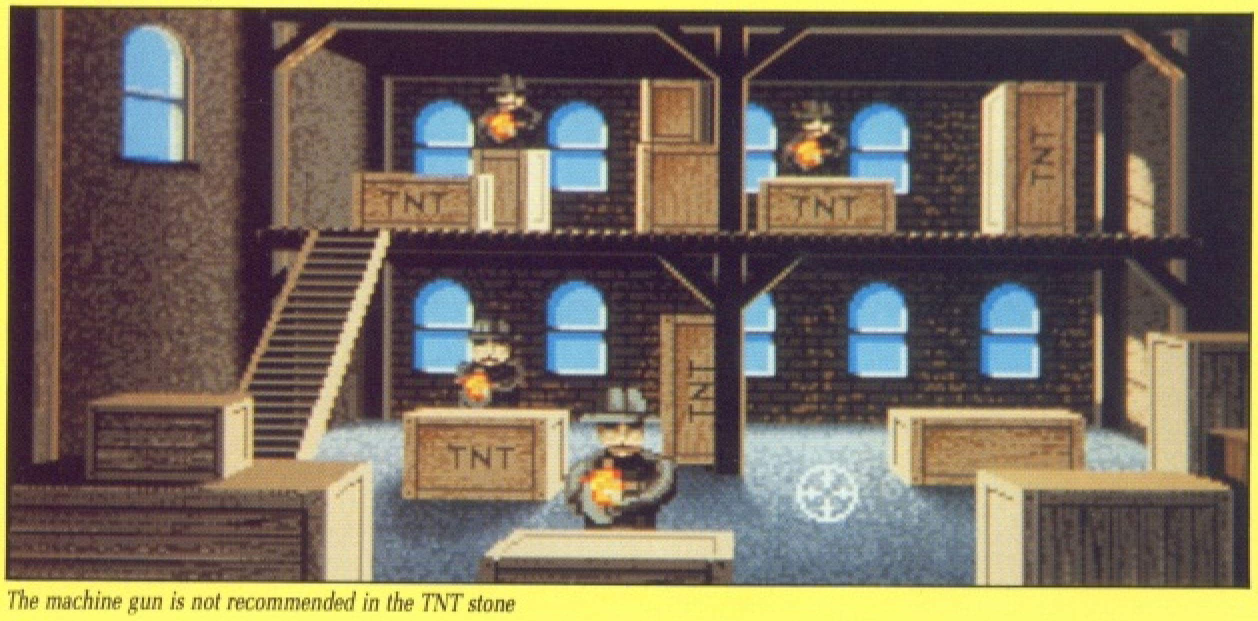
OVERALL *72%*

For the hobbyist a great toy. For the serious user a useful tool at a reasonable price.

CAPONE



Baddies pop up through windows along various streets



The machine gun is not recommended in the TNT stone

I GET a bit annoyed when games say, "Better than a movie, it's like being there!" on the cover. I'll be the judge of that, is my usual retort, but in Actionware's case I'll let them off. It's not like being there, but it is an enjoyable and addictive arcade game, so that's OK.

You are an enforcer, an Elliot Ness character, whose task in life is to splatter as many bad guys all over the pavement as humanly possible. You control your pistol with either the mouse, or an Actionware Light Phaser, a gun shaped controller which plugs into the joystick port.

Incidentally, these are available separately, not with the Capone game. They look just like the guns you get with the Sega console but won't work without conversion.

When using the mouse, you move a target shaped cursor around the screen, position it on the person you're shooting at and push the left mouse button. With the gun controller, you obviously just aim and pull the trigger. A splat shows where you've hit the screen.

It's basically a sophisticated shooting gallery, with baddies popping up through windows along various streets, while the screen scrolls gently to the right. Along the route, a lot of innocent bystanders, which you must avoid shooting, get in the way. As the game progresses the time you get to decide whether a target is a baddie or a goodie gets shorter, until you are blasting away with gay abandon. Your skill at deciding the right targets, and your quickness with the trigger are important, but you must also be accurate.

There are only a limited number of bullets in your gun and replacement magazines, so you have to make every shell count. You have to be quick about shooting the baddies, too, because they're not just the normal cardboard cutouts of your regular shooting gallery.

Nope, these dudes are packing heaters, or Chicago Pianos, and a few seconds after appearing will open fire.

You lose health points on a little slider indicator above your ammo count, and when this reaches zero you're a stiff. So the amount of points you get for any target is less the longer you leave it.

This is one way that the game gets harder as you go along, gradually working up to the stage where the screen is steadily filling with gangsters, all of whom are opening fire on you and dropping dynamite sticks which you have to shoot to blow up, plus a lot of pedestrians wandering aimlessly through the crossfire as though nothing was happening. You soon get to hate the bystanders, but don't give in to blowing them away, since you lose a life for every one you kill.

But there are things to help you. There is a mystery object to shoot, which according to the rules gives you an extra 30,000 points and six new lives.

Machine gun icons appear in each location, turning your pistol into a machine gun. This is nice for a while, especially when things get a little bit hectic, but the machine gun isn't to be recommended in the TNT store at the warehouse.

Capone sounds a fairly boring game on paper, and having read the cover of it I thought I was in for a bit of a yawnfest. But no, it is snappily designed, well worked out and addictive to play. There is not much variation in the gameplay itself, all you do is shoot people, but there's enough variation in sound and graphics design to hold your interest.

The warehouse section, for example, instead of scrolling the action past you, sets it in three dimensions, with the thugs getting bigger as they get closer.

The sound effects throughout the game are good and loud, and lots of fun besides. There is a note in the instruction book, which says "The sound effects in Capone are real. For best results connect your Amiga to a stereo system with good bass response and crank up the volume."

What do they mean, 'real'? I suppose they could be sampled, but not from real life. They are all cartoon gun noises, all boom and peeow, not real gun sounds. They are good though, and played through the stereo they do sound great.

A classy act, and an addictive game which any age group will enjoy.

Phil South

Capone
£24.95
Actionware

Sound
Graphics
Gameplay
Value

Overall – 85%

IKARI WARRIORS

I FIRST saw this game in an arcade nearly two years ago and became thoroughly hooked by SNK's attempt to out-gun Capcom's Commando. Elite snapped up the rights 18 months ago to convert it to every major format. The Amiga version has taken its time, but the wait has most definitely been worthwhile.

Play starts with your plane crashing in jungle many miles away from your headquarters. Equipped with a machine gun and a limited supply of grenades, you must fight your way home from deep inside guerilla territory. Grenades and fuel can be replenished by collecting tokens left by the retreating enemy.

To make matters a little more interesting than Leathernecks or Commando, you can climb into a tank. Provided you have enough fuel and armaments the tank can be used to blast through enemy defences and cause mass destruction.

A novel idea at the time, but now superseded by the Leathernecks four player feature, was the ability for two players to participate in the action, helping each other in much the same way as Gauntlet. The two player feature in Ikari is more fun than Leathernecks because there's more room to manoeuvre and you can't shoot each other in the back.

The gameplay is, as far as I can remember, practically identical to the arcade version. Even the superb animation of enemy deaths has been included. Graphically the game is not quite as good as the coin-op but the scrolling is smooth and the presentation clear. Ikari on the Amiga excels in the sound. Paula provides a carbon copy of the arcade soundtrack.

Although the game is over two years old it's still a classic. If you haven't seen the coin-op you could be in for a very special treat. If you have played on the machine you'll feel safe buying one of the most polished and authentic arcade conversions to appear on the Amiga.

Mike Regis

Ikari Warriors
£24.95
Elite

Sound
Graphics
Gameplay
Value

Overall – 70%





Equipped with a machine gun and a supply of grenades you fight your way home

SUB BATTLE SIMULATOR

THINK of the name Epyx and the first thing that springs to mind is high quality sports games. Breaking with tradition, Sub Battle Simulator, Epyx's latest creation, is based around the exploits of an advanced submarine.

This is Epyx's fifth game for the Amiga, its most adventurous and compares very well with Micrprose's Silent Service. The comprehensive manual must be read thoroughly before playing.

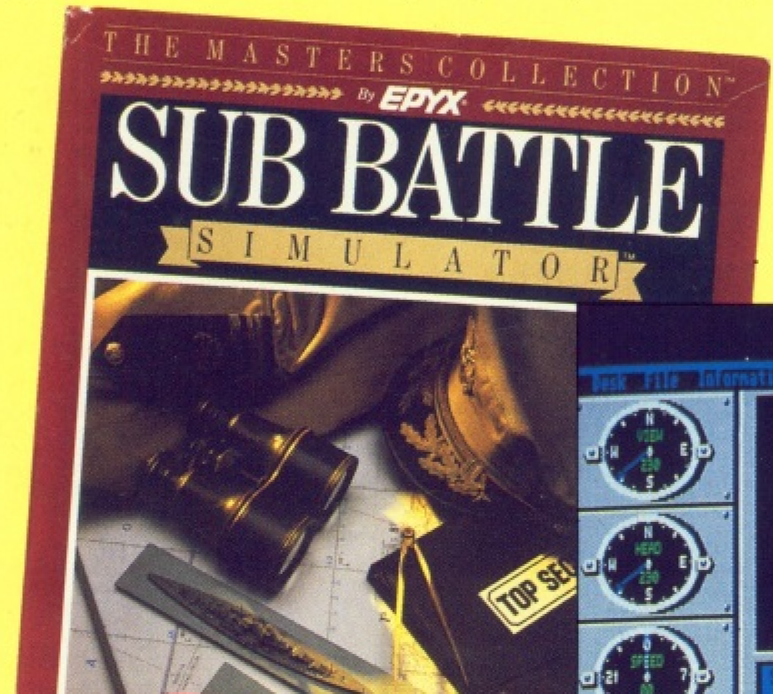
The usual instruments such as sonar, periscope view, submarine depth, speed and heading can be selected with relevant key or by using the mouse.

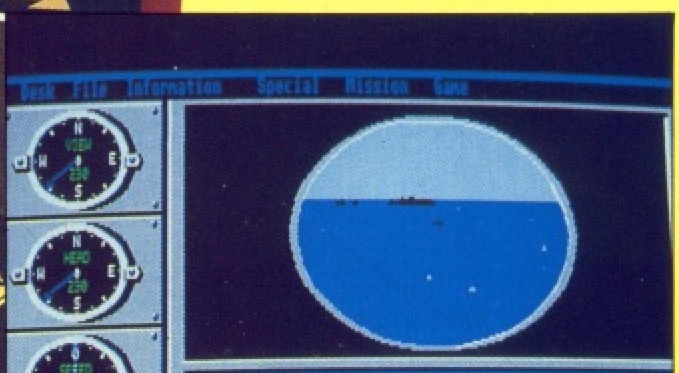
The first mission is to practice against a simulated convoy. You use torpedoes, anti aircraft guns, a deck gun and standard depth charges to sink as many ships as possible without sustaining any damage to your vessel. On return to Pearl Harbour you will be given a rating which determines the next mission.

I found the action just a little slow, as the game is geared towards the strategist and is packed with detail. The graphics are adequate and the sampled sound enhances the atmosphere.

I fear that Sub Battle Simulator is not really of the eye opener quality that we have come to expect from one of America's most successful software Houses. Dave Morse, the software manager of Epyx, was one of the founders of Amiga, something which should mean that Amiga games from Epyx are of a dazzling quality. This is a disappointment.

Chris Holmes





The control panel

Sub Battle Simulator
£24.95
U.S Gold

Sound
Graphics
Gameplay
Value

Overall – 51%

CHUBBY GRISTLE



The sprites are small and the animation crude

CHUBBY Gristle is an overweight hero, a character whose main aim in life is to stuff more and more food down his gullet. Quite why the authors decided to make him a car park attendant I'm not really sure, since the theme has little to do with parking cars but a lot to do with gorging food.

In fact, Chubby Gristle is nothing more, and in quality terms rather less, than your common or garden platforms and ladders game. The idea is to guide Chubby round a connected series of 20 screens, dodging hazards and trying not to let him fall off ladders and ledges.

Along the way he has to collect objects and gobble up as much food as he can in order gain weight.

Originality of style is not this game's strongest point – in fact, it's hard to find any strengths in the game at all. Certainly not in the sprites, which are the smallest I've ever encountered in an Amiga game, nor in the animation, which is minimal and crude at best.

The hero can do little other than move left and right, jump and climb up and down. The whole thing reminded me of such ancient Spectrum games as Manic Miner and Monty Mole, games that nowadays are more likely to be found in a museum than being sold as new entertainment.

The main aim is to get Chubby's weight to the one ton mark. When you do, his reward – according to the accompanying blurb – is to go home to Mrs Gristle for a good fry up or a steak and kidney pie followed by Spotted Dick.

A very ordinary game unredeemed by any special qualities, Chubby Gristle would only be worth considering if it were priced at a fiver. Even then, four screens of this stuff per pound sterling would still hardly be good value for money.

Bob Chappell

Chubby Gristle
£19.99
Grandslam

Sound
Graphics
Gameplay
Value

Overall – 27%

VECTOR BALL

THIS is one of the the oddest and most original sports games I ever had the pleasure of booting up on my Amiga. It is set in a surreal world of vector and shaded landscapes where the inhabitants of the planet watch their national sport, Vector Ball, whenever they have time.

This is a complex blend of ice hockey, netball and green bowling. If that sounds difficult to comprehend wait until you see the bizarre pitch of heavy contours, ditches, hills, ridges and valleys.

The object of the game is to outscore your opponent, manoeuvring the ball past the droid and into its goal area. As in netball, players are not allowed to move with the ball so they must stop and throw the ball to advance.

The wacky pitch is bounded by a fence so it is possible to bounce the ball off the side of the pitch to avoid contact with the opposing droid. One nifty feature which the programmers at Binary Design have added is a method of judging the power of the shot from a droid by the length of the robot's neck.

Plenty of alternative options can be selected before each game – different style pitches and custom robots with



Set in a surreal world of vector and shaded landscapes

improved speed and shot power. The pitch can have shaded or dot graphics. You can decide on the length of the game and the mass of the ball – a light ball needing less shot power to move a given distance.

Vector Ball can be played by either one or two players and the ability of the computer-controlled droid can be changed to suit the player. Although the one player mode is highly enjoyable, you don't really get to appreciate the intensity of the gameplay until you play against a friend. The pace is frantic.

Both sonically and graphically the game is highly polished with excellent scrolling and well designed sprites. The one annoying feature is that you have to wait far too long for shaded pitches to be generated.

This continues Mastertronic's excellent track record in budget games. Excellent VFM. The most innovative sports game I've ever seen, the gameplay is from another dimension.

Chris Holmes

Vector Ball
£14.95
Mastertronic

Sound
Graphics
Gameplay
Value

Overall – 70%

BOMB BUSTERS

ABOUT two years ago I recall seeing a game called Bomb Jack, a coin-op conversion from Elite. As a faithful rendition of the original game, it was very playable on most formats. The sounds were exciting and the graphics, interesting. The background to each screen shows views of famous landmarks around the world.

Why am I telling you all this? Well, I've just had the strongest dejá vu sensation playing Bomb Busters. The logo's the same, the backgrounds are the same, all the game graphics are the same... but where's the gameplay?

It's annoying to encounter a game which you know is fast and addictive on other less talented computers, only to find a slow version on the Amiga. Although graphically superior, this is very much inferior in the speed and addictiveness departments.

Is it because the programmers aren't very good, or have come to Amiga from 8 bit computers? Of course, the best Amiga programs are designed on the computer for which they were intended, where the programmers are interested in speed and quality.

Bomb Busters is a simplistic game, with sluggish controls and little or no inducement for the player to continue through the levels.

There is a somewhat limp attempt on the box to make some kind of storyline about terrorists planting bombs all over the world's famous buildings, but otherwise there isn't a lot to keep the player's interest in jetpacking around the screen headbutting bombs to defuse them.

What passes for a puzzle in the game is that you can't jet right up to the top of the screen, as your jetpack is too underpowered. To solve this you have to jump up to a ledge which is usually halfway up. Devious, eh?

The aliens that are supposed to be chasing you around the screen seem a bit preoccupied. I almost felt like saying to them, "Look, you seem busy. Shall I come back when you're more interested in killing me?"

Bomb Busters is a flaccid example of the game designer's art, and not even children would be fooled by it for long. Elite is working on the *real* Bomb Jack. It is bound to be better – save your pennies for that.

Phil South



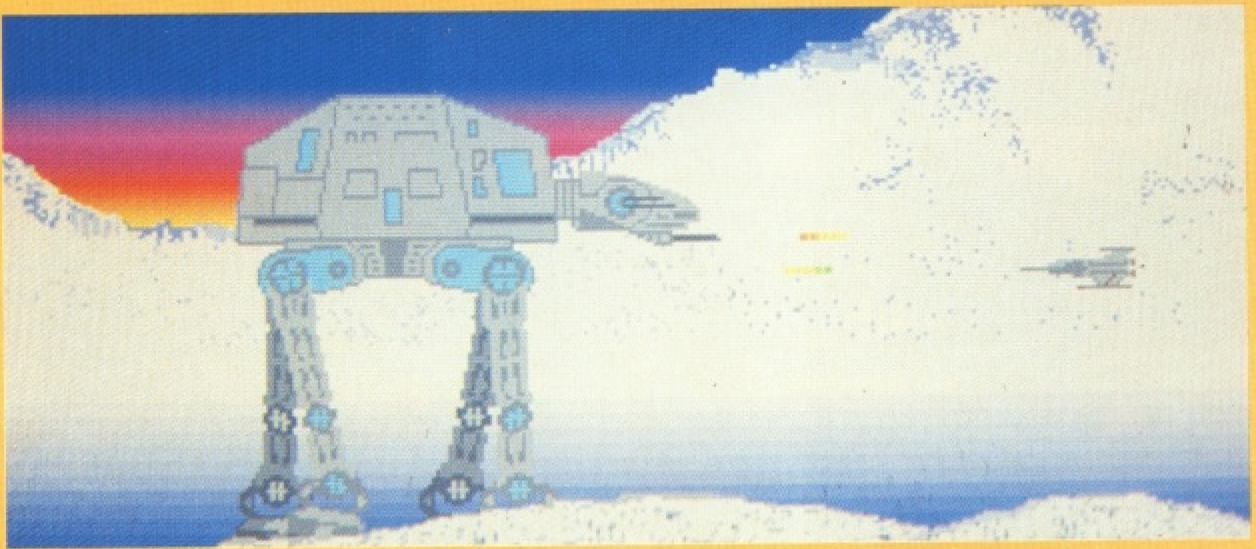
Terrorists have planted bombs all over the world's famous buildings

Bomb Busters
£24.95
ReadySoft

Sound
Graphics
Gameplay
Value

Overall – 25%

GANYMED



Fly your ship trying to destroy the big walkers as they lumber along

MY heart sank when I saw the cover of this game... not another Empire Strikes Back ripoff. You remember the bit where the tiny Rebel fighters fly against the massive AT-AT walkers.

Jeff Minter made a fortune out of a game called Attack of the Mutant Camels on the C64, and that was about a million times better as a game than this rather turgid attempt to rekindle an ancient idea.

Sure, it's been written for the American market, and perhaps they don't mind this sort of rubbish, but in this country the competition is a little stiffer.

The screen is divided into thirds for the action, the scanner and the score. You fly your ship in a Defender style fashion from the right to the left and back again, trying to destroy the big walkers as they lumber from left to right.

Apparently these are not products of the Imperial Empire, but spawn of the Tyran, and the little spaceship you control is said to be the property of someone called Lord Mantrex.

Yes, there isn't much of a story to it, but there you go, there are fewer really cracking reasons to destroy lumbering great Deathbots these days.

I do appreciate a good premise for a game, though, where one can be found. Any excuse for the gameplay is all right, as long as it's well written and contains no character names with lots of ZZZs or XXXs. I'm afraid the Star Warriors, the rebels you are fighting for, are a terrible idea.

The game is fast, to be sure, but with no real control over what's happening to your ship. If you take off too slowly you get shot; fly faster and you get out of control and crash into one of the Deathbots.

The sounds are depressingly similar to the sound effects from the Star Wars games, although nicely synthesised rather than sampled. The sound you get outside the action is a little bit boring, being just a synthesised throb. The graphics are nice enough, but somehow a little bit wooden, what I would call 8 bitty.

Ganymed is derivative, and frankly a bit of a letdown compared to other games of it's type. I'm reminded of Firebird's Return to Genesis, which although in a similar price range is a much more enjoyable game, being better thought out and well presented.

Phil South

Ganymed
£24.95
ReadySoft

Sound
Graphics
Gameplay
Value

Overall – 20%

STAR GOOSE



A light hearted view of absolutely mindless destruction

STAR Goose can best be described as a surreal shoot-'em-up combined with elements from Marble Madness and Slap Fight. Developed by Steve Cain and Graham Everett, it bears their very professional stamp of presentation throughout. The Marble Madness overtones stem from the landscape, which scrolls vertically. It is made up from hills, banks and concave slopes which ensure the game is not just another vertical scrolling shoot-em-up.

The aim of the game is for your Star Goose to reach checkpoints at the end of each level while obliterating anything which stands in its way.

Equipped with a standard blaster and missiles the game takes a light hearted view of absolutely mindless destruction.

While you advance, small pods can be collected which replenish ammo, fuel and shield status. Without these the game will not last very long. The action can be broken by entering a tunnel which allows your goose to collect egg shaped energy orbs giving a boost to the fuel status.

The variety of enemies and the quality of animation are the most striking features of Star Goose. Each alien seems to have its own character and pattern for movement. Generally the graphics are acceptable rather than stunning.

Sonically Star Goose is none too impressive, the programmers have ported the sound from the ST so the music and spot effects are very tiny.

As with most games from the authors of Star Trek and Black Lamp, the gameplay is initially very difficult but once mastered soon becomes compelling. However, once you reach this stage, and you get over the surreal graphics, the game becomes a touch monotonous as the action does not vary.

Chris Holmes

Star Goose
£19.95
Logotron

Sound
Graphics
Gameplay
Value

Overall – 66%

STREET FIGHTER

IN Street Fighter you take control of one of the two young martial arts masters, Ryu and Ken. Extremely confident in your ability, you travel around the world and take on all challengers.

There are 10 different street fighting opponents to take on, two of each from Japan, America, England, China and Thailand. If you defeat both adversaries from each country you are taken into a bonus stage that allows you to earn more money by breaking as many bricks as possible with the traditional macho karate chop.

The Capcom arcade game was hugely successful because the machine had punch pads, which allowed the player to bash the coin-op as hard as he wished. The strength of the hit represented the equivalent force of an attacking strike in the video game.

Without this feature, Street Fighter even in the arcades was only a very average karate game. At home awesome graphics do not an arcade game make. When they start to move the incompetence of the programmers is clearly shown.

The animation of the large sprites is so slow that you could make a cup of tea while the computer works out joystick-selected moves. Pathetic sprite animation and an uninspiring soundtrack lost my interest, and although I persevered for the sake of the review I became increasingly bored with this very shoddy and bland attempt.

The game suffers from the leg sweep syndrome, which means that you can progress easily to level five by using one move continuously.

Street Fighter could have been one of the games of the year, but because the programmers were content to take their money for an Amiga version and then simply port the game from the ST, it has finished up as a very poor conversion.

Chris Holmes



Travel around the world taking on all challenges

Street Fighter
£19.95
U.S Gold

Sound
Graphics
Gameplay
Value

Overall – 38%

VIXEN

HUR, hur, Page 3 bird in leopard skins, nudge, nudge, and carrying a whip! Free poster! Slobber, slobber. It's smut factor time as a slighty famous Page 3 cutie struts her stuff all over a horizontally scrolling arcade lasher from Martech.

Doubtless Martech was hoping that Corrinne Russell would do for Vixen what Maria Whittaker did for Palace and Barbarian. The trouble is that Barbarian was a good game.

Vixen's plot is grade A dross, waffling on about dinosaurs eating everyone up, the vixen being brought up by a family of foxes and being given the power to metamorphosise, by the Fox Sages.

What you need to know is that you must guide, leaping, crawling and running, curvy Corrinne through a prehistoric landscape, whipping away admirers and monsters alike.

Laying into the landscape, though superficially a pointless exercise, does reveal certain goodies, among them ones which endow Fox Time.

Every time you find and collect a fox head it slides along a wire at the top of the screen. The upshot of this is that if you finish the level and attain maximum Fox Time, you get to frolic underground in the guise of a fox as a bonus.

Tortuously senseless stuff, but it does serve to show off the animation of the characters rather well. Both Vixen (the woman) and Vixen (the animal) are very well animated, but it's hardly film-like video digitised animation as the box would have you believe. Controlling either of them isn't quite right either, although it is easier than on all the other versions of this game.

So it goes... you run along, whip monsters, leap over chasms and watery pits, find things like the big gems for big bonuses, and all while the sky slowly darkens. To say this game bears a resemblance to Elite's Thundercats is putting it mildly.

Although easy enough in the early stages, around level four big spiky crawly things arrive on the scene, at which point it's time for Mega-Whip. If you haven't found the Cynthia Payne special, which kills everything with one blow, then you are in the primordial gunk.

Graphically Vixen is nothing to get excited about, as even our heroine has no facial features, but what is completely unacceptable is the horizontal scrolling. Anyone would think this was running on an ST.

Equal liberties have been taken on the sound front with the provision of some exciting Spectrum 128k music. It's monotonous, and becomes boring after 30 seconds. The effects accompanying the action are just as bland, save for the whip which has a satisfying crack.

I'm afraid to say that Vixen is all hype and very dull gameplay, and completely unimpressive technically. The packaging claims "a game beyond imagination in a world beyond belief." Substitute "without" for "beyond" and you'll be closer to the truth.

Mark Luckham

Vixen
£19.95
Martech

Sound
Graphics
Gameplay
Value

Overall – 60%





Guide curvy Corrinne through a prehistoric landscape

A NICE PAIR! SAVE £12 IN TOTAL

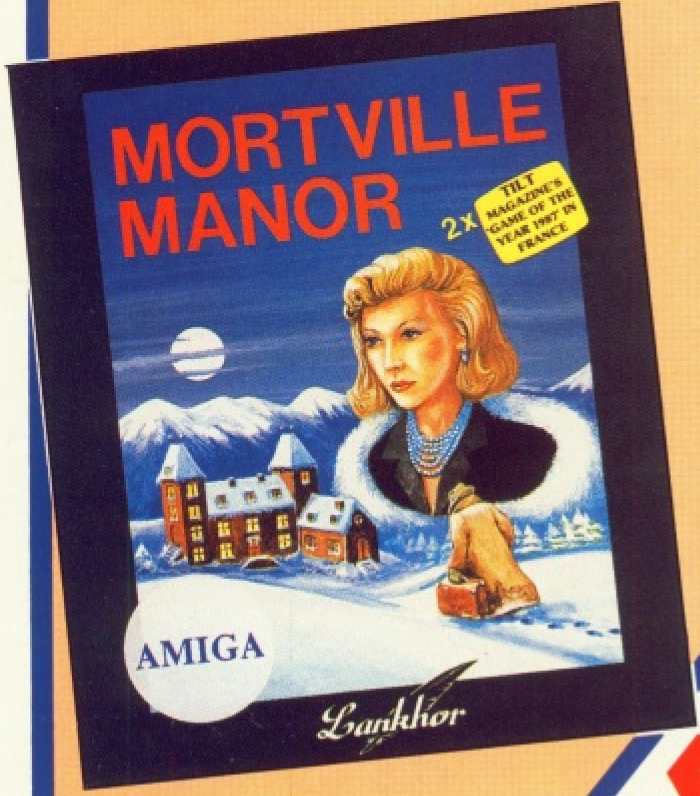
SAVE £7

MORTVILLE MANOR

Julia, an old friend of yours has mysteriously died at Mortville Manor. So, strongly suspecting foul play, you set off to determine how she died.

Throughout the game characters talk to you in heavy French accents, while haunting digitised sound effects such as hooting owls and church bells are sprinkled in strategic places.

As reviewer Bob Chappell said: "This two-disc adventure has got the lot – text, digitised music, sound effects and colour graphics".



For only £17.95, saving £7, order your copy today and see if you can solve the mystery at Mortville Manor.

RRP £24.95

OUR PRICE

£17.95

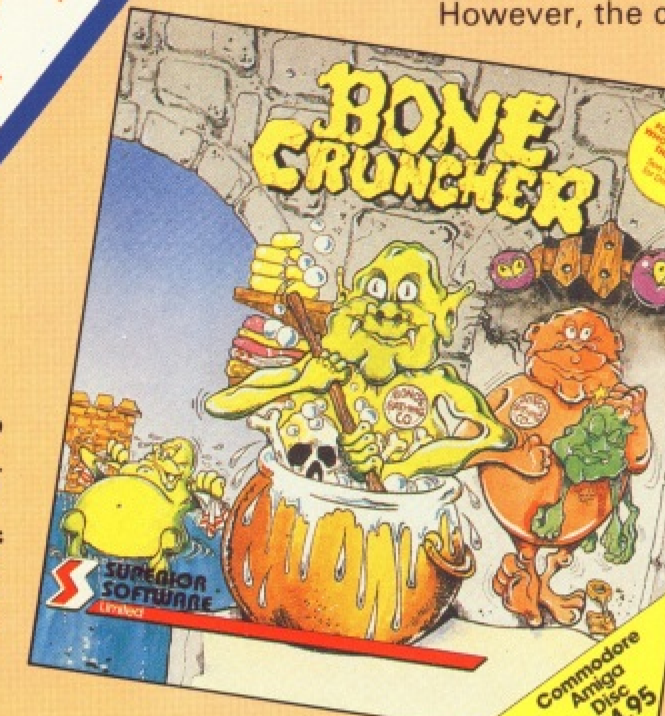
SAVE £5

BONE CRUNCHER

You are Bono, a friendly dragon, residing in a picturesque sea-castle. As a shrewd business-dragon, keen on a "nice little earner", you make your living by selling soap to the giant monsters who battle in the sea surrounding the castle.

With the aid of your business partner, Fozzy, you produce the soap by collecting skeletons from the castle's caverns and then boiling the bones in a cauldron. However, the castle caverns are fraught with danger: there are monsters who will kill you, spiders who will eat you alive, and glooks who will block your path.

A smash hit on the BBC Micro, Bone Cruncher is a soap-opera not to be missed. For just £9.95, this is definitely a game you should have in your collection!



RRP £14.95

OUR PRICE

£9.95

Order your copies NOW, using the form on Page 73

Live forever with Amiga pokes

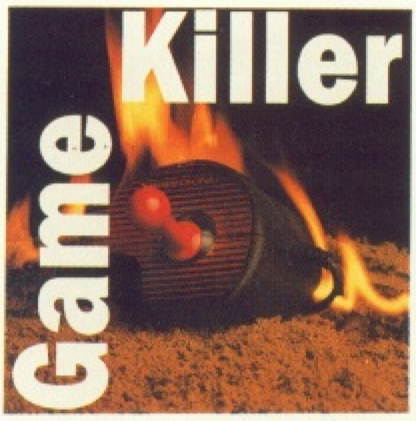
THIS month I have a treat for you – Amiga pokes. It's probably the first time any magazine has printed pokes for an Amiga game and I am indebted to Justin Gavinovic who spent many hours with a copy of Devpac to work them out. *So it is over to Justin for some magic code.*

Thanks MTH, first up how to get loads of lives for Leathernecks. These destructions assume that you have never used Amiga Basic before – I hadn't before I wrote this! They also assume that you only have one disc drive. They don't need you to take copies of your disc, since the poke does not write to the disc.

To use the poke follow these steps: Switch off your Amiga and count to 10. Start up the Amiga with Workbench and insert the Extras disc. Open the window and click on the Basic icon, then type in the routine below. Insert a disc that has some space on it. Save the file POKE from Basic so you can use it again. Remove the disc and insert your Leatherneck disc. Select the "Start" option to run the program and have fun. This poke has a strange effect on the "lives left" display. Do not worry, I don't.

```
tot=0
FOR n=249856& TO 250034& STEP 2
READ a$ a=VAL("&h"+a$)
tot=tot+a
POKEW n,a
NEXT n
IF tot<>809546& THEN PRINT "data error.":END
cheat=249856&
CALL cheat

DATA 43fa,0092,4240,2c79,0000,0004,4eae,fe68
DATA 45fa,008e,2480,41fa,008c,227c,0003,0000
DATA 203c,0000,08a8,611e,41fa,000e,23c8,0003
DATA 0734,4ef9,0003,0024,33fc,1000,0005,c8ac
DATA 4ef9,0005,8014,45fa,0044,2489,45fa,0042
DATA 2480,2208,243c,0000,03ed,2c7a,0044,4eae
DATA ffe2,45fa,0024,2480,2200,243a,0020,263a
DATA 0020,2c7a,002c,4eae,ffd6,223a,000c,2c7a
DATA 0020,4eae,ffdc,4e75,0000,0000,0000,0000
DATA 0000,0000,646f,732e,6c69,6272,6172,7900
DATA 0000,0000,6466,303a,6c65,6174,6865,726e
DATA 6563,6b00
```



Down in the jungle there is a game they call Terramex. Bones through noses won't save the savages from your pith helmeted attacks when you have an extra 250 odd lives to make their lives more uncomfortable.

```
tot=0
FOR n=249856& TO 250001& STEP 2
READ a$
a=VAL("&h"+a$)
tot=tot+a
POKEW n,a
NEXT n
IF tot<>636529& THEN PRINT "data error.":END
cheat=249856&
CALL cheat

DATA 6100,0046,337c,0002,001c,42a9,002c,237c
DATA 0000,0400,0024,237c,0003,0000,0028,2c79
DATA 0000,0004,4eae,fe38,41fa,000e,23c8,0003
DATA 00ce,4ef9,0003,000c,13fc,00ff,0000,d4ed
DATA 2c7c,0000,4c00,4ed6,2c79,0000,0004,93c9
DATA 4eae,feda,45fa,009c,2480,43fa,0086,4eae
DATA fe9e,43fa,002e,4280,4281,41fa,0014,4eae
DATA fe44,43fa,001e,45fa,006a,234a,000e,4e75
DATA 7472,6163,6b64,6973,6b2e,6465,7669,6365
DATA 0000
```

Next up, infinite lives for Elite's Beyond the Ice Palace. Just the thing for a devilishly difficult game. Shame though that the conversion from 8 bit was not handled by Dave Perry, the 7ft genius who wrote the original. Again, this poke produces an error message when you swap discs because the game is on a non-standard Dos disc. Click on Cancel until the computer accepts it. Type in, save and run the listing.

```
REM INFINITE LIVES FOR
REM BEYOND THE ICE PALACE

tot=0
FOR n=249856& TO 250007& STEP 2
READ a$
a=VAL("&h"+a$)
tot=tot+a
POKEW n,a
NEXT n
IF tot<>675139& THEN PRINT "data error.":END
cheat=249856&
CALL cheat

DATA 6100,004c,337c,0002,001c,42a9,002c,237c
DATA 0000,0400,0024,237c,0003,0000,0028,4eae
DATA fe38,41fa,001c,227c,0006,0000,23c9,0003
DATA 0210,7003,22d8,51c8,fffc,4ef9,0003,000c
DATA 13fc,0060,0000,0772,4ef9,0000,0100,2c79
DATA 0000,0004,93c9,4eae,feda,45fa,009c,2480
DATA 43fa,0086,4eae,fe9e,43fa,002e,4280,4281
DATA 41fa,0014,4eae,fe44,43fa,001e,45fa,006a
DATA 234a,000e,4e75,7472,6163,6b64,6973,6b2e
DATA 6465,7669,6365,004a
```

If, like our editor, you cannot play Return to Genesis without constantly

Max "The Hacks" Tennant is the master of game play. Whatever the game he'll win at it, fair means or foul – often with a little help from his friends. If you have a tip for a game send it in. For every one we print we'll send you a game from the collection in our goodie drawer and a fabulous Konix Speedking, as used by all serious joystick jockies

◀

crashing, you need this next poke. It will furnish you with infinite lives. Go to it! Rescue those scientists.

```
tot=0
FOR n=249856& TO 250037& STEP 2
READ a$
a=VAL("&h"+a$)
tot=tot+a
POKEW n,a
NEXT n
IF tot<>680817& THEN PRINT "data error.":END
cheat=249856&
CALL cheat

DATA 43fa,009a,4240,2c79,0000,0004,4eae,fe68
DATA 45fa,0096,2480,41fa,0094,227c,0003,0000
DATA 203c,0000,08a8,6126,41fa,000e,23c8,0003
DATA 0734,4ef9,0003,0024,33fc,ffff,0005,9d4e
DATA 33fc,ffff,0005,a79c,4ef9,0005,8014,45fa
DATA 0044,2489,45fa,0042,2480,2208,243c,0000
DATA 03ed,2c7a,0044,4eae,ffe2,45fa,0024,2480
DATA 2200,243a,0020,263a,0020,2c7a,002c,4eae
DATA ffd6,223a,000c,2c7a,0020,4eae,ffdc,4e75
DATA 0000,0000,0000,0000,0000,0000,646f,732e
DATA 6c69,6272,6172,7900,0000,0000,6466,303a
DATA 7365,6e74,0000
```

OK. So now you have saved the universe it is time for a bit of destruction – infinite lives, bullets and grenades for both players in Ikari Warriors, Elite's wicked conversion of the coin guzzler. I'd like to thank Steve 'Snake' for help with this mega wicked poke.

```
tot=0
FOR n=249856& TO 250051& STEP 2
READ a$
a=VAL("&h"+a$)
tot=tot+a
POKEW n,a
NEXT n
IF tot<>634010& THEN PRINT "data error.":END
cheat=249856&
CALL cheat

DATA 6100,007a,337c,0002,001c,42a9,002c,237c
DATA 0000,0400,0024,237c,0003,8000,0028,2c79
DATA 0000,0004,4eae,fe38,41f9,0007,e000,45fa
DATA 001a,7031,20da,51c8,fffc,23fc,0007,e000
DATA 0003,812e,4ef9,0003,800c,203c,4279,4e71
DATA 33c0,0000,be66,33c0,0000,cd56,33c0,0000
DATA c6a8,33c0,0000,cade,4840,33c0,0001,1010
DATA 33c0,0001,1166,4ef9,0000,8020,2c79,0000
DATA 0004,93c9,4eae,feda,45fa,009c,2480,43fa
DATA 0086,4eae,fe9e,43fa,002e,4280,4281,41fa
DATA 0014,4eae,fe44,43fa,001e,45fa,006a,234a
DATA 000e,4e75,7472,6163,6b64,6973,6b2e,6465
DATA 7669,6365,0000
```

Finally infinite lives for Novagen's Backlash. Use the same instructions as those for Ikari Warriors. This means that it will produce a disc error when the disc is inserted into the drive. This should be ignored as usual.

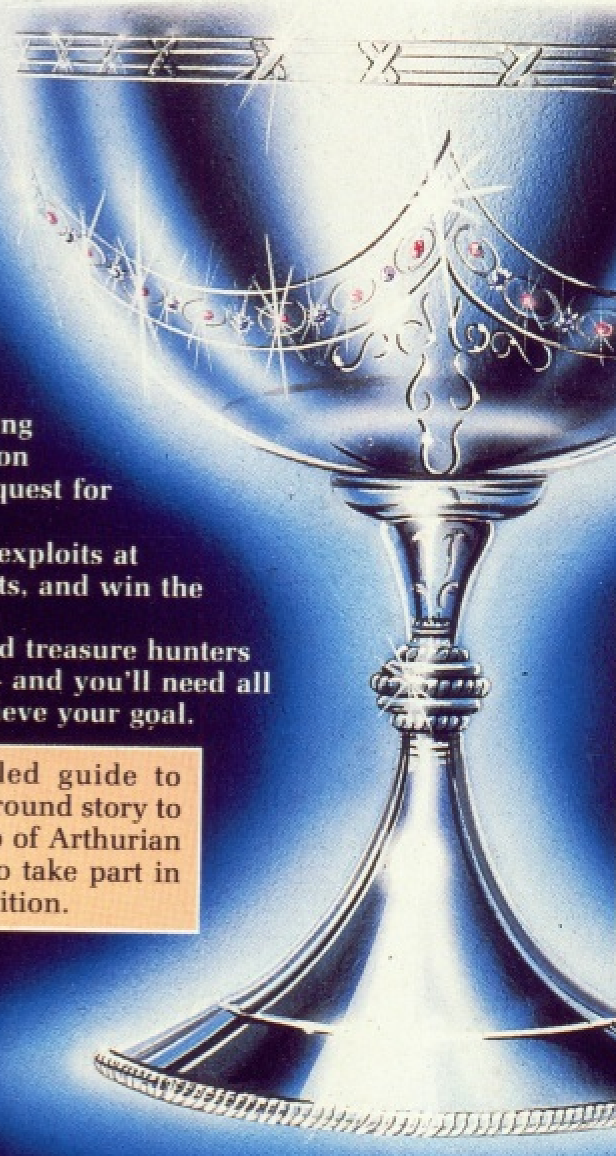
```
tot=0
FOR n=249856& TO 250006& STEP 2
READ a$
a=VAL("&h"+a$)
tot=tot+a
POKEW n,a
NEXT n
IF tot<>639275& THEN PRINT "data error.":END
cheat=249856&
CALL cheat

DATA 6100,004c,337c,0002,001c,42a9,002c,237c
DATA 0000,0400,0024,237c,0003,0000,0028,4eae
DATA fe38,41fa,001c,227c,0000,6000,23c9,0003
DATA 0080,7003,22d8,51c8,fffc,4ef9,0003,000c
DATA 13fc,0060,0000,9e32,4ef9,0006,8002,2c79
DATA 0000,0004,93c9,4eae,feda,45fa,009c,2480
DATA 43fa,0086,4eae,fe9e,43fa,002e,4280,4281
DATA 41fa,0014,4eae,fe44,43fa,001e,45fa,006a
DATA 234a,000e,4e75,7472,6163,6b64,6973,6b2e
DATA 6465,7669,6365,0000
```

Max The Hacks is always on the lookout for help in game playing, send your hints to him at 78-84 Ongar Road, Brentwood, Essex, CM15 9BG. A game from the goodie drawer and a Konix speedking joystick for all he prints.



WIN this solid silver Grail, worth £5,000, in the exciting Quest for the Holy Grail competition. Full details in every box.



Travel back to the Age of Chivalry when knights were bold, galloping across the countryside and rescuing damsels in distress.

Level 9 recreate the time of wizards and the Knights of the Round Table in their greatest adventure yet. Lancelot consists of three interlinked adventures, spanning the complete saga from the foundation of the Order to its finest hour – the quest for the Holy Grail.

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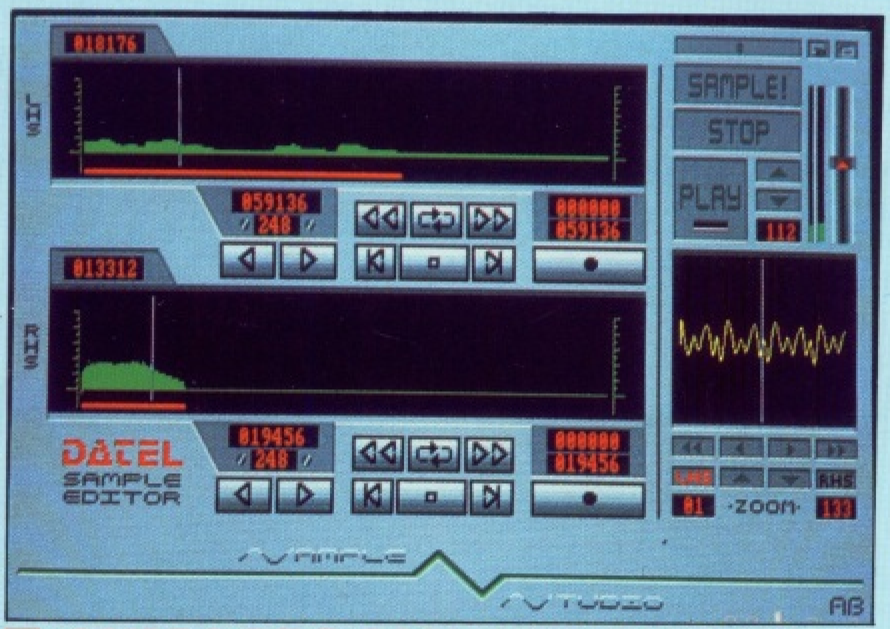
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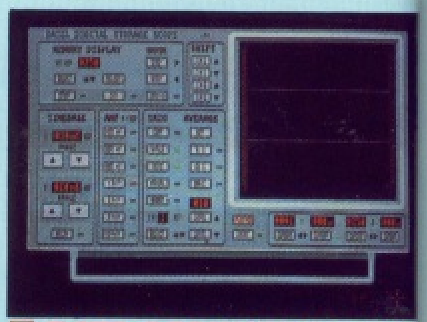
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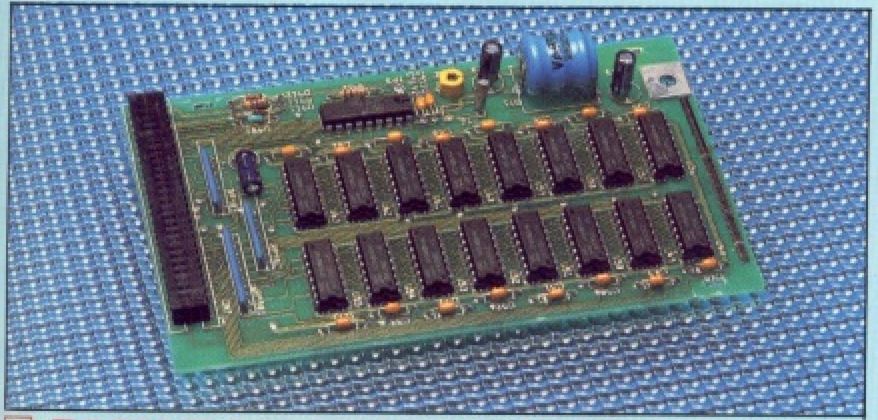
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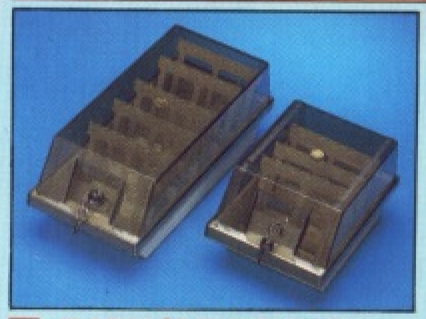




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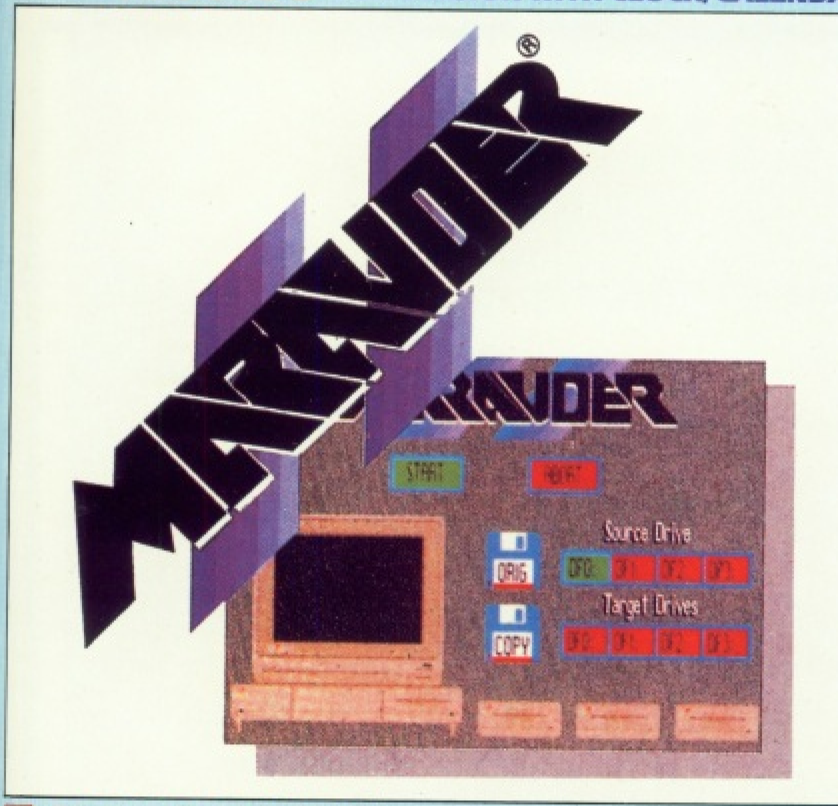
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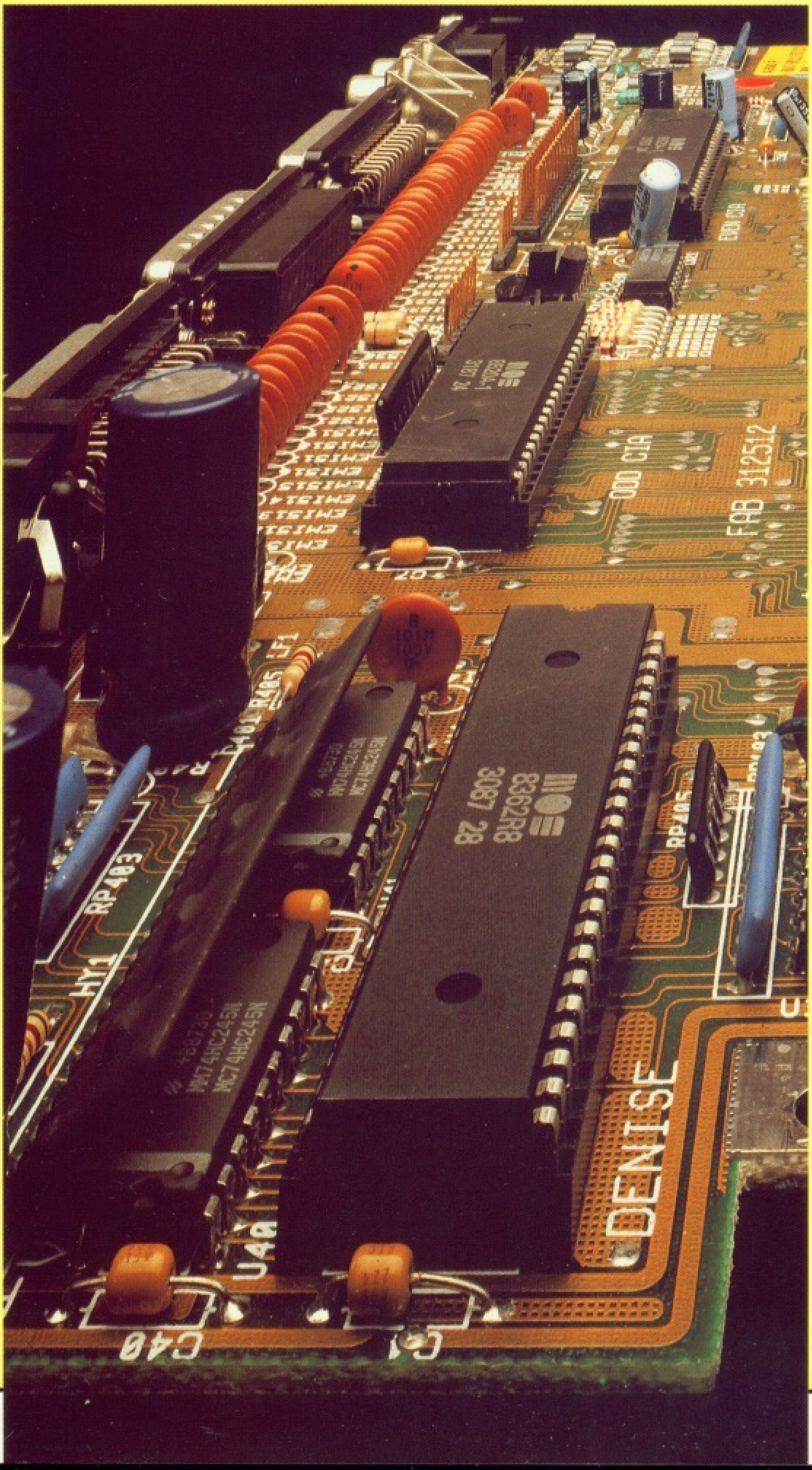
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Into the silicon underworld



Rupert Goodwins probes Denise to find out why the Amiga makes such an exhibition of itself

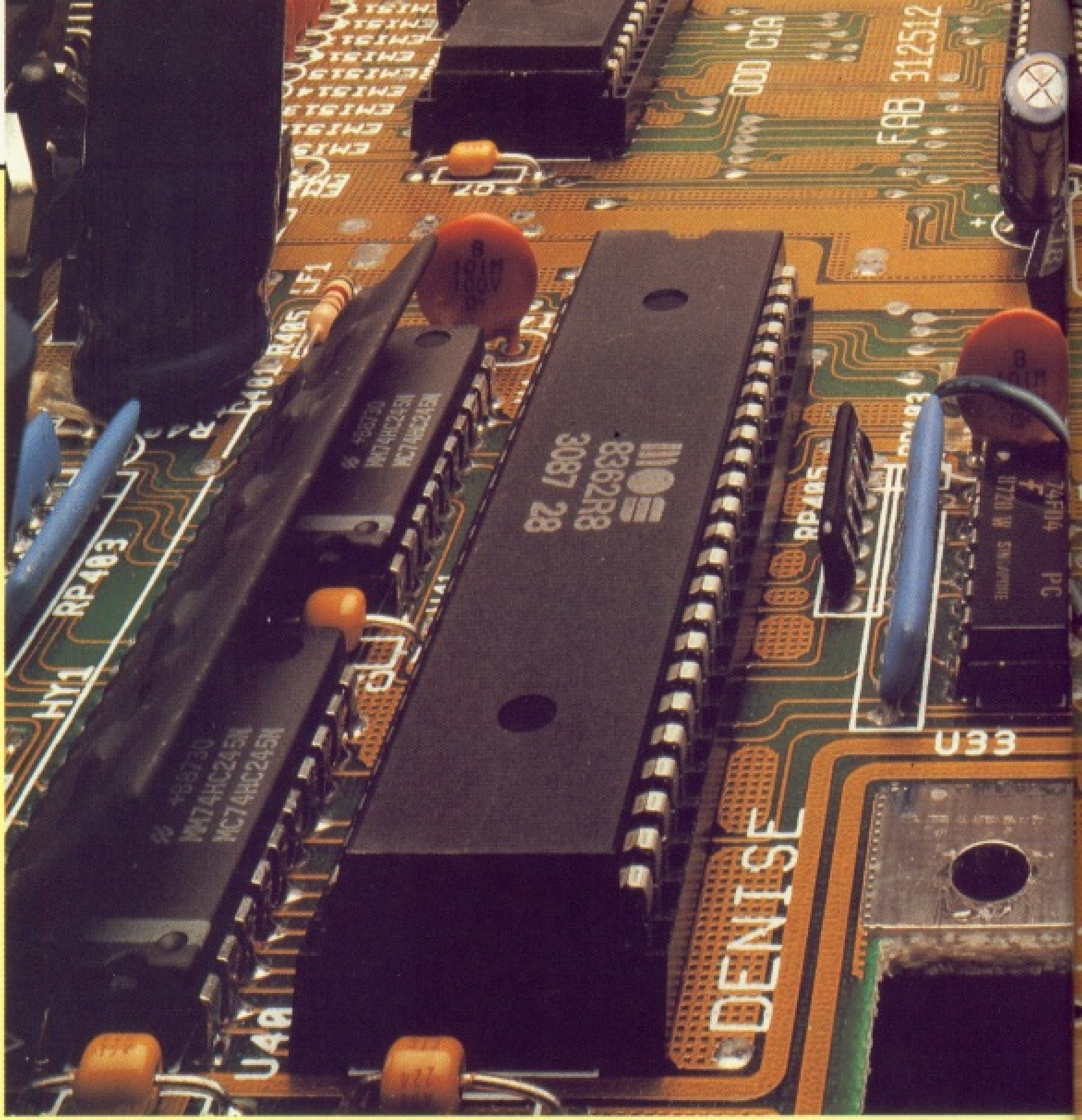
PICTURES, they say, are worth a thousand words. On the Amiga they're a bit more valuable than that. Each image that crosses the glowing phosphor of the Workbench takes up 32k – that's 16,000 words – with more needed for every working window, sprinting sprite or iridescent icon. You can see the free memory count go down on the Workbench screen as you open windows. But why?

TV pictures – monitor pictures too, for that matter – are simple things. If your eye was fast enough, you could see that what appears to be a picture in two dimensions was built out of a flying dot. Starting at the top left of your picture, it scans to the top right, hops back to a point just below the start and scans across again. This repeats until the dot has made its way to the bottom of the screen 625 lines later, whereupon it zooms up to the top left and starts all over again. It does all this at an alarming speed. Each left-to-right line takes less than one fifteen-thousandth of a second, and the complete set of 600 odd lines gets repeated 25 or 50 times a second depending on whether interlace – a way of interleaving lines to increase flicker – is on or off.

And all this has to happen exactly on time; a new picture has to be shown exactly 50 times a second, otherwise the carefully maintained illusion breaks up.

It is such an effective illusion because the human eye can't distinguish events that happen more

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than about 10 times a second, although some people can tell that the screen is flickering, And the screen itself has a phosphor which continues glowing for a few hundredths of a second after it is turned on, reducing flicker further.

It glows in the first place because a finely-focused beam of electrons hits it, the intensity of the beam governing the intensity of the light. A magnetic field generated by a couple of coils moves the beam about the screen – if you take a Walkman, start it playing without a tape and hold it close to the monitor you'll hear the magnetic field as it changes and moves the electrons in your tape head in a similar manner.

How phosphor works is a matter for the quantum physicists, but the idea behind it is that by bombarding a molecule with electrons, electrons within that molecule become more energetic. It's like heating water with a hot flame. This energetic state is artificial, and can't be maintained for long. The electron soon lapses back to a lower energy state, and the energy is released from the molecule as a single photon of light.

Different molecules have different electronic configurations and absorb different amounts of energy which are released as different wavelengths of light – hence the different colours from different phosphors.

AND unfortunately the physics of the whole sordid affair dictate that the effect only works with very energetic electrons showering the phosphor. So monitors and TVs are stuffed full of high voltages – 25 kilovolts is common – and large tracts of vacuum to effectively accelerate electrons and get them to hit the phosphor on the inside of your monitor glass before they hit some innocent molecule of air.

There are three types of phosphor in a normal Amiga monitor – red, green and blue (look closely at your monitor screen). Varying relative intensities of these three colours produces an effect of a complete range of colours. When you play around with the RGB mix in Deluxe Paint, for example, you're directly changing the brightness of the three phosphors on your screen.

The Amiga has to produce signals that the monitor circuitry can amplify to control the electron beam. A high signal is brighter than a low one, and by changing the signal rapidly as the electron beam scans across the screen, a row of dots is produced. These build up into characters or pictures as the beam moves down the screen.

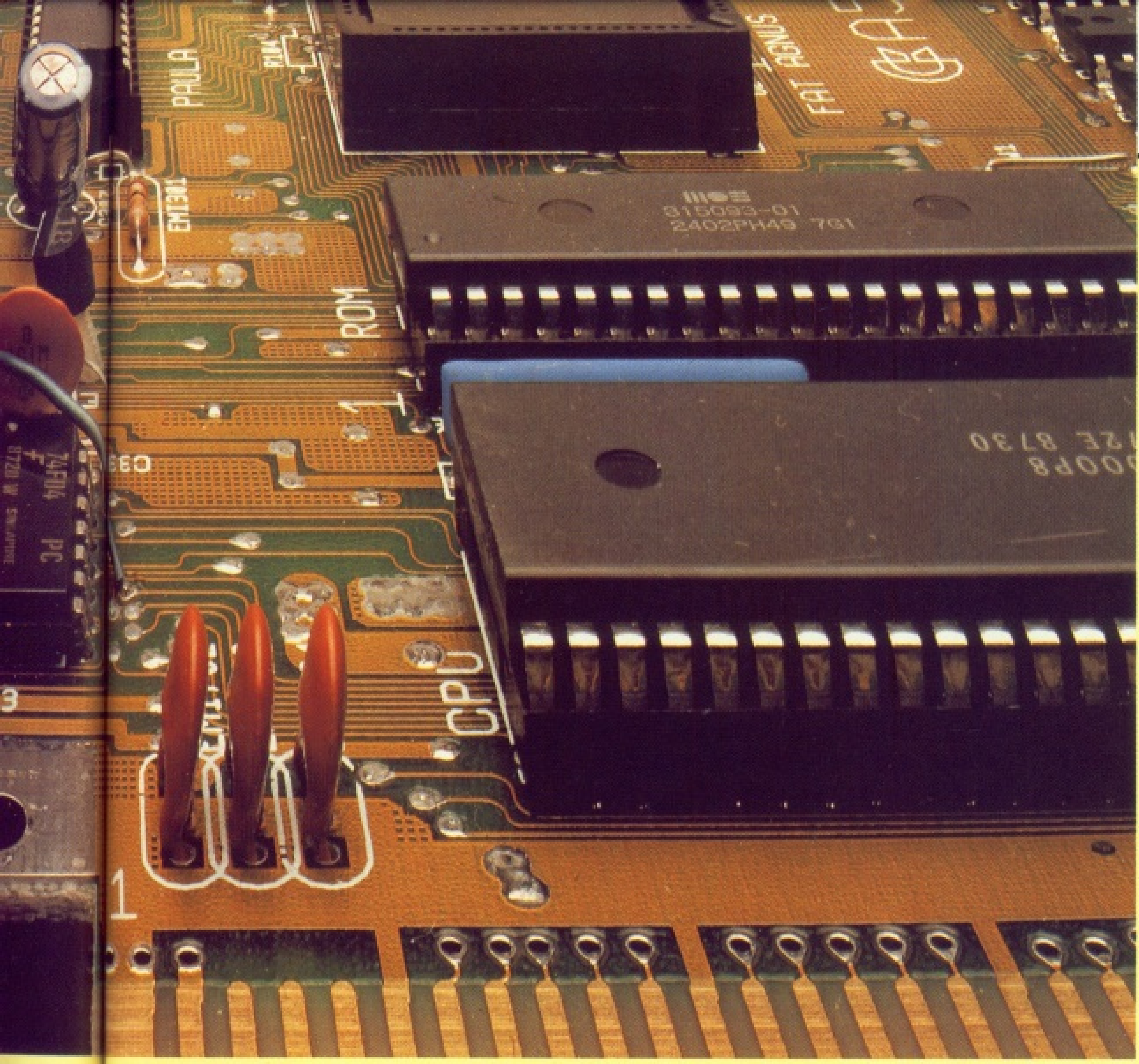
Of course, the dots have to be carefully timed. If the Amiga is in high-resolution mode, and producing 640 pixels across the screen, then each pixel has to be turned on or off in 640th of the 15000th of a second that the entire line takes. It gets worse, as there are three lots of these signals, one each for red, green and blue, and each can be at one of 16 levels. 16 different shades of red, times 16 different green, times 16 blue equals 4096 – the total number of colours that the Amiga can produce. That's a lot to get right.

All the information the Amiga knows about – the data to run programs, make noises or a picture – is stored in ram. This is just a collection of high and low voltages, nothing in between, which the 68000 processor can read and write. The other chips in the Amiga can also get at the ram, and these chips are responsible for deciding which part of the ram holds the relevant information for the picture, getting it out on time, turning it into the three signals, and finally shoving it out of the socket.

THE socket is as good a place to start as any. Page F-6 of the Amiga manual has all the gritty bits. CN9 is the memorable name of the video connector. Attached to it are a number of wires which carry the array of signals that the Amiga can produce or use. The main ones are the RGB video. These go to HY1, the video hybrid. This hasn't got a name, but it doesn't mind because it's not very clever. It takes four lines for each colour – it takes four bits to count up to 16 in binary – and turns them into just one with 16 different levels.

It is called a hybrid chip because it is made out of numerous smaller chips and components, all bonded on to a common base and sealed. The other chips in the Amiga are the more common single slab of silicon type. HY1 turns the four lines of digital info into the analogue by D to A converters, in much the same way as Paula deals with audio – see last month's issue – but as video is hundreds of times faster and less tolerant of slight errors, the circuitry is more complex.

The hybrid also provides an "everything at once" signal which can be used to drive monochrome monitors – this is the composite



signal. On the other side of the video hybrid come a couple of "glue" chips that provide a deal of signal buffering to keep the voltages up – glue, remember, is the slang term for odd bits of connecting circuitry – and these are in turn hooked up to the first real performance star, Denise.

DENISE's internal workings can be scrutinised by the curious on page A-19. The traditional collection of oddly-named boxes and fat arrows can't really disguise the fact that at the right-hand edge of the diagram are the red, green and blue signals which snake off to the hybrid.

Someone made a slight slip on the diagram – the R G B arrows should be fat with a 4 in them, as they have four lines each. They come from the box marked 32 color registers – this contains the individual values held for each of the 32 colours that can be displayed at once. It's a kind of specialised memory bank – other circuits in Denise provide it with one of 32 signals, and it decides what mixture of red, green and blue to send to the video by looking up three sets of four bits.

By writing new values to this part of Denise, the colour corresponding to whichever of the 32 signals is being displayed can be changed. This is the palette circuitry. The colour select decode box just takes a set of five lines and turns it into the right format for the colour registers, and it gets its lines from the priority control logic (PCL). And this is where the real magic begins.

In the old days, which strangely enough most of the rest of the computing industry seems locked into, deciding what data to turn into video was simple. There was a single area of memory, which every so often the video chip would read. One byte of memory corresponded to one position on the screen, and that was that.

Then came sprites, which were areas of memory that could appear anywhere on screen. Blitters, which could move data around memory without using any processor power, weren't far behind. With the Amiga, which uses a selection of all these techniques, the part of ram that controls a particular part of the screen could be anywhere.

Pick up an icon and drag it across the screen. As you do so, whatever is beneath the icon disappears from view as the icon passes, reappearing after it's gone. Deciding what's going to appear is the job for the PCL – the priority of a sprite (for example) is compared against the priority of the background and the one with the higher number wins. Priorities are just numbers stored in registers, but they take a lot of the hard work out of programming moving objects.

Decide that your Grungewhakkit sprite has a priority of 4, the strange orange-blue trees of the planet Ux are priority 5 and the towers of the city of Nodnol 3. Wherever a tree and a tower overlap, the computer decides automatically to display the tower, but should a Grungewhakkit glide past it will be shown in preference to the tree but not instead of the tower. So an illusion of depth is created; an illusion strengthened by the ability to set a transparent colour.

This overrides the priority mechanism for one colour only – there's a box marked Bit Plane Priority and Cont. Registers which does this – and wherever this colour would be shown the background detail appears instead.

The circuitry to do all this is simple in concept, but it has to act fast and there has to be a lot of it. There can be up to eight sprites wandering about, as well as the invisible colour tricks, and all the information about all of them has to be analysed for each pixel produced.

Just moving sprites about is a feat in itself. The pattern for each sprite lives somewhere in memory – it doesn't matter too much where. Fat Agnus knows exactly, because the programmer sets up registers within it, and also knows how far away from the left hand edge of the screen the sprite is expected to appear.

This is a timing function – Fat Agnus watches a clock until the value of the clock matches the value in the sprite register. By then the flying spot has covered just enough of the line to be in the right position for the sprite, and Fatty then feeds Denise the bytes from memory that make up the sprite picture information.

Denise knows about sprite priority, and also how far away from the top of the screen the sprite will appear. She checks to see whether the spot is far enough down the screen by counting the number of times the spot has started to cross from left to right, and if it is, starts to feed the information from Fattie to the priority circuits.

All the programmer has to do to change the position of a sprite on screen is write two new numbers; one to Fat Agnus to move the sprite along, and one to Denise to move it up or down. The internal circuitry also checks to see if two or more sprites

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◄

have the same position information; if there is any overlap, it registers (sorry) a collision which can be read and action taken (ker-pow!).

The business of taking a couple of bytes of information and converting them into the right-sized chunks to feed to the rest of the circuitry is called serialisation.

AT its simplest, imagine that one byte of memory with eight bits set to 1 or 0 matches up to eight pixels on the screen. The video chip gets the byte, stores it in a register, and then starts to shift it out one bit at a time. It does this just fast enough to ensure that as the electron beam scans the screen it gets a stream of bits corresponding to lit or unlit pixels. When the byte is exhausted, and the electron beam has moved on eight pixels, the video chip gets another byte from memory and starts again.

In Denise there are a number of serialisation circuits, all producing sets of bits at the right speed for the video. In general, Fat Agnus keeps them all supplied with data and the prioritisation circuits decide who gets to appear on the silver screen.

The last part of video circuitry in Denise is the one that displays most of the information. When not dealing with sprites, the ordinary humdrum business of displaying screenfuls of text or pictures has to go on. Various circuits combine separate areas of memory – known as bit planes – which represent different "layers" of pixel data into a single set of signals.

Denise also reads and stores the position of the mice that sometimes adhere to an Amiga. Mice have a large ball that rolls around the place. Connected to the ball by a couple of wheels are two sets of light emitting diodes (LEDs) with light sensors. The wheels have slots cut in and as the ball moves the slots pass the sensors producing a stream of voltage pulses.

One sensor measures up and down movement, the other left and right. And Denise counts the pulses, thus providing a way for a program to detect where on the desk the mouse is and put up a sprite (like the Workbench pointer) in the right place on screen.

The various signals on the circuit diagram on page F-6 also include some labelled HSYNC and VSYNC. These, horizontal and vertical synchronisation respectively, tell the monitor when to start the electron beam from the left or from the top of the screen. Usually, these timing signals are worked out by Fat Agnus from the Amiga's internal clock, but the Amiga can also work from an external clock.

This unusual feature means that signals generated from the computer can be locked to signals from outside – from a video recorder for example – with only a little extra circuitry. Which makes the computer very popular with TV companies and Channel 4.

● *Next time, the mysterious Fat Agnus takes the stage.*

The plain man's guide to CLI

Phil South asks what's in an icon, checking out .info and LIST in the process

ALTHOUGH not strictly an AmigaDos CLI topic, I thought it would be interesting to mention a bit about .info files. If you've ever typed DIR in a CLI, you'll know that there's usually more beneath the surface of AmigaDos than meets the eye. All files which appear on the Workbench have two files attached to them. The first simply carries the name of the program, and so it should, because it IS the program itself, the bit that runs. The other is a curiously named file like so:

```
<filename>.info
```

Say the file is called Tina–Turner, then the other mysterious file is called Tina–Turner.info. The .info part of the file carries all the information about what the icon looks like, plus if it's a data file it also carries the name of the program you need to run it. This means that when you open icon Tina–Turner, *(Ouch – I could see that one coming –Ed.)* the AmigaDos runs the program, then feeds the name of the file to it, meaning that what the user sees is the program seeming to launch itself and coming up with the selected file already loaded.

So as you can see, .info files are peculiar to individual applications. There are ways to attach .info files to files which don't have any, and thereby attach an icon to them. One way is to use a program called XICON, a PD program which allows you to launch a program designed to be run from CLI.

The other, more esoteric way, applies less to stand alone programs and more to data files associated with a specific application. This may come in handy if you damage an .info file, or never had one in the first place.

Save a dummy file, with no information in it; boot up your program and save a blank file there and then.

Then save your iconless file to the same disc. The files will stick together, creating an icon for the original file. Obviously if the file you want to iconise is too different from the application, you won't get very far, but in a surprising amount of cases, especially with IFF files, it works fine.

And speaking of trash. Weren't we? Oh well, I never was any good at links. I had a note the other day from a reader who couldn't throw out his trash. No matter how many times he threw a certain file into the bin and selected Empty Trash, the file staunchly refused to be trashed. The problem stems, Mr R. from the "state" of the file. In AmigaDos, files have four states: Read, Write, Execute and Delete.

Try typing LIST at a CLI prompt. What you get is something like this:

```
More                     11100 rwed 01-Mar-88 09:30:15
Trashcan                   Dir rwed 26-Apr-88 17:21:25
c                          Dir rwed 26-Apr-88 17:23:26
Clock.info                1118 rwed 26-Mar-88 08:03:09
Clock                    17448 rwed 04-Nov-86 15:33:17
System                     Dir rwed Today 09:41:28
l                          Dir rwed 26-Apr-88 17:24:17
Preferences.Readme.info 300 rwed 26-Mar-88 08:02:55
devs                       Dir rwed 04-May-88 08:48:52
```

...and so on until:

```
s                          Dir rwed 26-Apr-88 17:27:06
t                          Dir rwed 26-Apr-88 17:27:07
Drivers.Readme            5928 rwed 12-May-88 14:52:48

19 files - 10 directories - 290 blocks used
```

The letters rwed after the size denote whether the file is readable, writable, executable or deletable, and this is the problem. The files you want to trash are not deletable, due to the fact that whoever made the file wanted it protected. You can alter any of these states with the AmigaDos word PROTECT. The syntax is as follows:

```
PROTECT <filename> FLAGS <states>
```

The "states" bit means that you can select which of the states you want the file to be accessible by, like so:

```
PROTECT snouty FLAGS WR
```

This means that the file "snouty" is writable and readable, but not anything else. Or you could make it read only by:

```
PROTECT snouty FLAGS R
```

There is of course a more radical syntax, which is the simplest form, where you just say:

```
PROTECT fort_knox
```

with nothing after it. You see, PROTECTing the file without the FLAGS bit settings means it hardly exists at all. It appears on directories but cannot be accessed in any way. Pretty useless, you'd say, but just think, if you had a bit of source code sitting around on the same disc as some of your compiling work, would you risk it being overwritten by a file you mistakenly save with the self same filename?

Good thinking, of course you wouldn't.

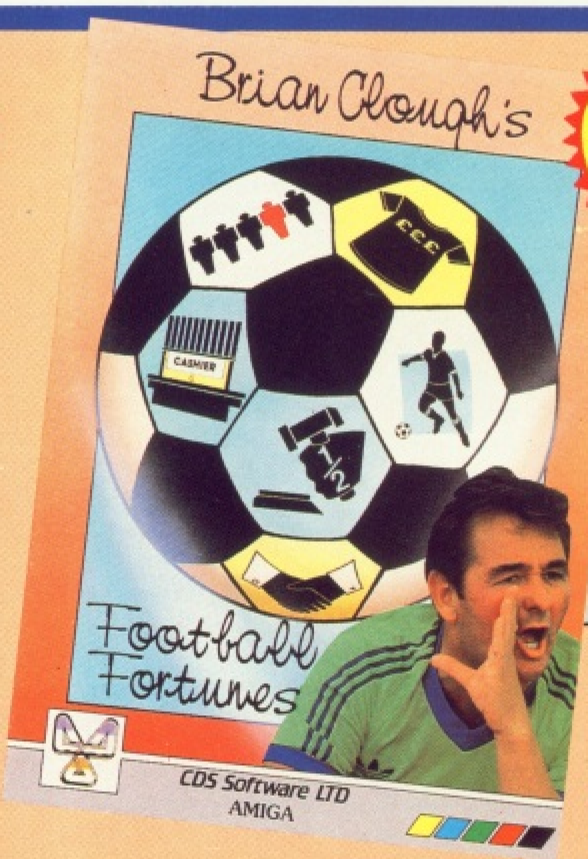
Incidentally, I noticed the other day in one of the many AmigaDos manuals it refers to the syntax as PROTECT <filename> STATUS, instead of FLAGS. That's very odd, perhaps they wrote the manual from another manual and forgot to try it out first. Be assured that FLAGS is the right syntax, and remember to try out all the tips you hear of before you have to use them in anger.

If they don't work, as a lot don't, you'll be stuck with no recourse but a curse and a CTRL-A-A.

And don't forget, if you have any AmigaDos queries, or even solutions to interesting problems, write to Phil South, Amiga Computing, 1st Floor, North House, 78-84 Ongar Road, Brentwood, Essex CM15 9BG.

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AMIGA Letters

Conversion con

QUITE a few things to say. Firstly, the mag is brill, when I noticed the ad I had to subscribe. I mean, it's the first decent Amiga mag to appear yet. Secondly, if, or when, you offer free games to new subscribers, will subscribers like me be able to obtain the games cheaply?

I noticed that back issues were rather short. Is this temporary, and when will it expand? Not that I'm complaining, its still got more information than other unscrupulous mags.

One thing annoys me, most Amiga games are a download from STs, as Alex Walsh pointed out, yet the games are usually about an extra fiver. Why?

Steven Hunter,
Roxburgh, Scotland.

Thanks for the compliments. While ST software outsells Amiga games by around 2:1 it is cheaper to produce games for the Atari. I suspect the Amiga will have caught up by Christmas – Ed.

Hop to it

WHILE on holiday this year doing the rounds of the amusement arcades, I could not get my wife away from a game called Frogger. She normally hates the arcades but loved the Frogger. I own an Amiga 500 computer and was wondering if you would know if I could obtain this game.

D P Bowles,
Beckton, London.

Sierra On-Line owns the rights to Frogger, but don't have any plans to convert it for the Amiga. I don't know of any similar games, but the first reader to let us know of one will be rewarded with a copy of Sentinel – Ed

Weather eye

A NEW weather observation system has been installed at my old school incorporating a satellite dish, software and a dual drive RM Nimbus. As I am a keen weather watcher I would like to be able to connect my Amiga 500 with the system via a modem to receive pictures that have already been saved – I realise that I can't control the equipment directly.

Is this feasible? I would expect that a fairly simple program would be needed to read the screen, pixel by pixel, and relay the data down the 'telephone'.

Is it possible to receive pictures any other way apart from owning the equipment myself? I seem to remember seeing a service for the BBC Micro on Micro Live using a modem and at the PCW show in the year before last on the ST – which nearly persuaded me to buy one!

Gavin Wilding,
Eye, Suffolk.

The service is called WeatherLink and is part of the MicroLink system. Amiga software should be available very shortly. For more details contact them on 0625 878888.

Hard discount

AT last a top quality magazine specifically to support a top quality computer. Congratulations on your first two issues, and good luck for the future.

Why is it, though, that I can buy a 20 megabyte hard disc for an IBM PC compatible for about £200, whereas a similar product for an Amiga costs £500? OK, so I know that there are economies of scale and that some components are different, but the majority of the components must be broadly similar – the disc, the controller and so on – but 250 per cent more?

Now if somebody could develop a cheap (£100?) board that would allow an IBM hard disc card to run on an Amiga....

Martyn de Young,
Kent.

Spirit Technologies (0101 801 485 4233) in Utah has just what you are looking for, but expect Amiga hard drive prices to slide.

Write to: The Editor, Amiga Computing, 78-84 Ongar Road, Brentwood, Essex, CM15 9BG. We'll send the writer of the best letter each month a program from our goodie drawer.

Colour connection

I HAVE a Toshiba television which is fitted with a 21-way Scart Euro Video socket and I would like to use this in conjunction with an Amiga 500. Please could you tell me if this is possible?, what quality of display I can expect and what should the pin connections be?

Also, I will be starting an Open University degree course shortly which requires the use of a computer. The specification calls for an IBM compatible with the following requirements:

MSdos 2.1 or higher, GEM Version 2 or higher, single disc drive (5.25 or 3.5), keyboard (84 key IBM compatible minimum), monochrome or colour monitor, printer port (parallel or serial), serial port (RS232 or equivalent) and mouse with appropriate firmware or software device driver.

The above configuration must be capable of running unmodified IBM versions of: Lotus 123 V2, UCSD Pascal IV, PC Automator, First Framework V1.1

I will be able to use an IBM compatible for my course, but would rather use the Amiga if possible. I

►

know of at least one software emulator that might be able to provide a solution, but I would be grateful if you could confirm that I will be able to run the software above on PC Transformer, or if not, if there are any other alternatives. Within reason, processing speed is not of primary importance.

Martyn de Young, Maidstone, Kent.

You can get an Amiga to Scart cable from a good Amiga retailer and the results will be close to those from a proper colour monitor. Your Amiga offers all the facilities of the IBM spec except Gem and MSdos. Commodore's transformer is really too slow to be used seriously.

You have two options, either upgrade to an A2000 with bridgeboard, or buy a cheap clone. You could do the Pascal part of the course on an Amiga, but it sounds as though the rest of the software needs you to downgrade to a PC.

As you are facing a £1,000 bill for the software you are looking at, you might as well go for the Bridgeboard solution and have the consolation of a jolly nice Amiga to go with your tatty PC.

Price pusher

I AM writing to enquire about my best policy for making a complaint about an advertisement in your magazine, *Amiga Computing*, August 1988 edition. I realise, by your disclaimer, that you say you are not legally responsible for any adverts, but I feel you have an obligation to help if you wish to be considered a serious and helpful magazine.

The advertisement shows a 512k Ram extension with clock/calendar, advertised at £89.99. However, on making further enquiries I was told it was £109.99 due to an increase in the price of memory chips and the advert being placed several months earlier. It is the non-honouring of their price which is the basis for my complaint, and I would appreciate any advice on my best course of action.

J L Hainsworth, Pudsey, West Yorkshire.

The ram price increase is a problem which has affected the entire computer industry. Only Commodore has benefited as a result of it.

Because Commodore has secure orders for large quantities of ram it has been able to maintain prices while everyone else put theirs up. This is good for you and me in that Atari has suffered and Commodore is able to sell the Amiga for the same price as Atari does the ST.

The more Amigas out there the better and cheaper software will become.

The unfortunate consequence of this is that third party manufacturers have suffered. Ram prices have doubled and you cannot expect anyone to carry on selling a product at a price which would cause them to make a loss.

I am sure that at £110 with expensive ram the advertiser has a smaller margin that it did at £90. The maker didn't want to raise the price, it was a situation forced upon him. Spirit has stopped selling its boards in the UK because of the price hike.

You ask for advice on a course of action. A 1 megabyte Amiga is a much nicer machine than a 512k Amiga; at £100 it is one of the upgrade bargains of all time. Have pity on the Acorn Atom owners who paid £4 per k not so long ago. Upgrade your machine.

Amiga Answers

Open wide

Q *I wanted to look inside my A500 but can't find a screwdriver which will fit the funny dross head screws. Why does Commodore use these? I appreciate that I will invalidate my warranty, but since I am a qualified electrical engineer I am not worried about this since I will fix the machine myself if it goes wrong.*

Richard Peter, BSc,
Gibraltar

A The screws are called TorX and the easiest way we have found to remove them is with a small electrical screwdriver filed down so that the tip fits exactly across the inside of the hexagon. The reason Commodore used these screws is not to stop users from getting inside the box, although most people shouldn't go poking around inside.

Jeff Porter of Commodore Engineering explained, on the international communications service UseNet, the real reason they use TorX screws is to minimise the number of stripped Philips head tips they go through in the course of a normal production day. Apparently, before using TorX screws, they chewed up one tip per day per station. Now they never have to replace any.

Solve your Amiga anxiety with a letter to Amiga Answers. Our panel of experts is ready to sort out all kinds of tricky problems. From machine code to midi, communications to compilers. Whatever your question our team will find the answer.

We cannot deal with enquiries personally so please don't send an SAE. But we do need loads of questions. So write to Amiga Answers, Amiga Computing, North House, 78-84 Ongar Road, Brentwood, Essex, CM15 9BG.

Printer poser

Q *I have recently purchased the Star LC-10 printer for my Amiga and at present I'm using the Epson printer driver from the preferences. The manual which comes with the printer has a great wealth of printer escape codes but I am unable to get these to work through Amiga Basic. Please help!*

Paul Harrington,
London

A The LC-10 is Epson compatible, so set the DIP switches to the Epson default, which should be in the manual. Your problem is that you are trying the obvious. LPRINT strips control codes – ask Microsoft why. The Amiga solution is to open a file and write to it.

If you open the file to PAR: you should use the printer's escape codes, which can be found in the printer manual. If you open the file to PRT: you can use the Amiga codes found in appendix D of the computer manual.

Screen speed

Q *I have successfully used Load ILBM-Save ACBM on the extras disc to create an ACBM file from a Deluxe Paint image, but I can't seem to access this file from Basic.*

R. Moyes,
Scotland

A ACBM is a variation on IFF, which is faster but less flexible. To read an IFF file into Basic you need to read each line, decompress it and then put into the correct bit plane.

An ACBM file loads each bit plane as a huge lump. Look at the Basic program Load ACBM on the Extras disc, which will show you which files you need to open.

Amiga on the move – the main problem

Q *I currently live in California but an moving to Europe in the fall. I want to take my Amiga with me but am not sure if it will work on the 50Hz mains system.*

Bruce Hart,
Monterey,
California

A Carolyn Scheppner of Commodore Amiga Technical Support answered this on UseNet by saying that for an A500, providing it was fed the correct mains voltage, the mains frequency was not important, as the A500 generates all of its timing internally.

The A2000, B2000, and A1000 require mains at the correct frequency. Having said that, if you do need to use an American Amiga in the UK you only need to replace three components. The table lists the differences between the different models, and shows the components to replace when you move from one country to another (you will also need a new monitor!).

		A1000	A2000	A500	B2000
Agnus	NTSC part # PAL part #	252125-01 252362-01	252125-01 252362-01	318070-01 318071-01	318070-01 318071-01
Crystal	NTSC part # PAL part #	325566-14 252344-01	325566-12 252344-01	325566-14 252344-01	325566-12 252344-01
Power	110V USA 240V BSI 220V VDE 220V SEV	327173-01 -02 -03 -04	internal jumper on power supply	312593-01 -02 -03 -04	internal jumper on power supply

A2000 is the original German A2000 (not sold in US) and B2000 is the US A2000 with square "fat" Agnus.

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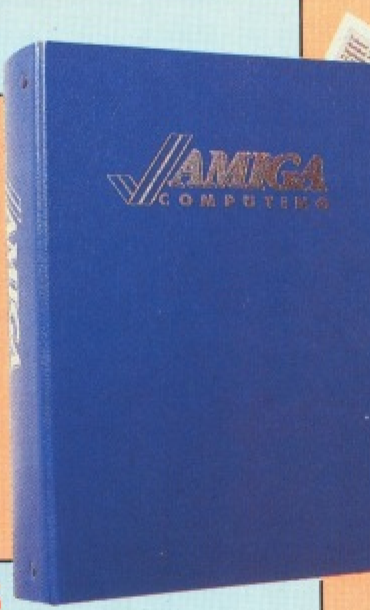
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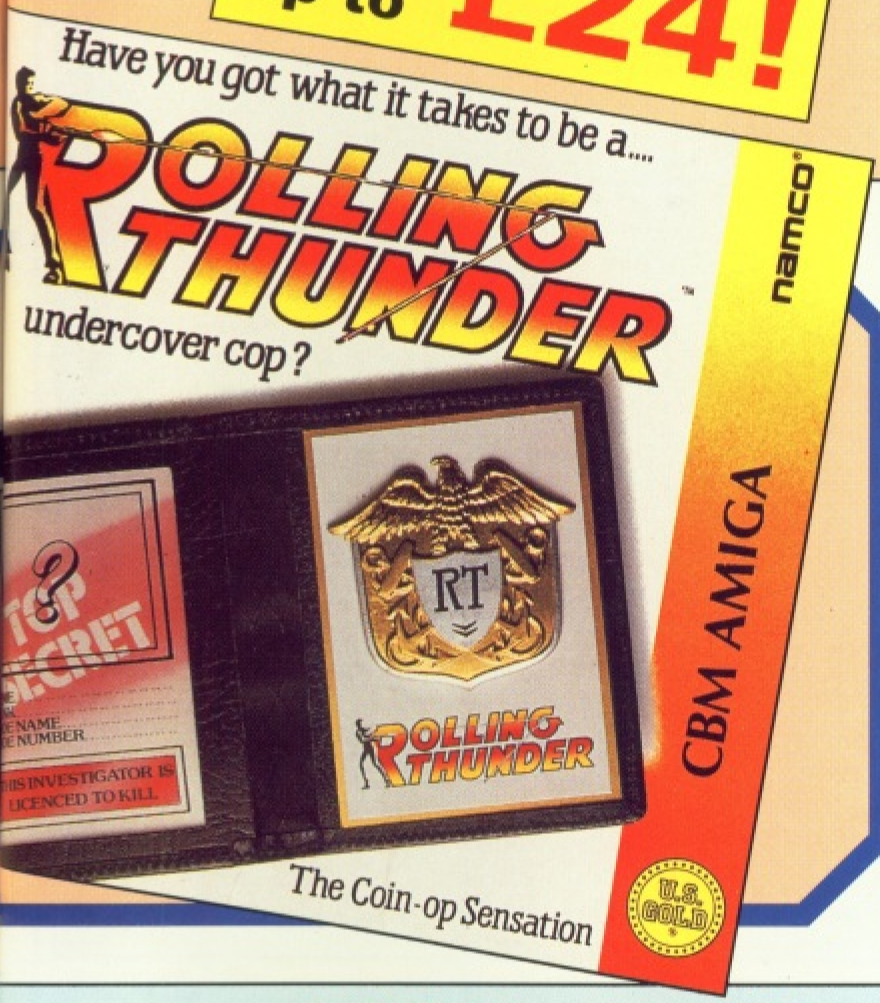
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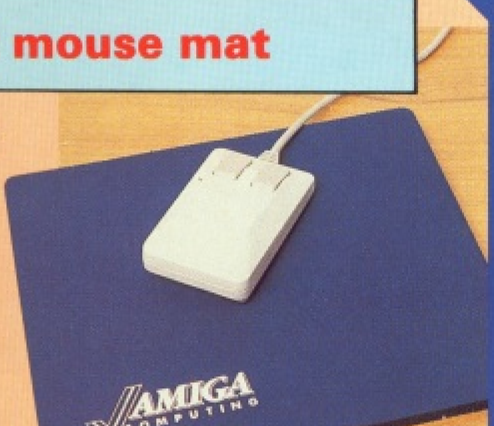
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AMC10

Guru's haunt

THE United States Department of Defense suffered a break-in. Leaving aside the worrying question of how one of the most secure establishments in the world could fall foul of petty thieves, it is interesting to note that they stole a computer. More interesting is that it was an Amiga with a 68030 processor. The DOD was using it to simulate enemy attacks.

Obviously it didn't predict that the enemy would come in through the bathroom window. Still 68030 Amigas aren't the easiest things to sell under dodgy circumstances – I'm told that the technical term is "fence". I'm sure that the men from the ministry will be checking up on any ads for slightly used Amiga '030 boards. No one has said if this was an unannouced Commodore upgrade or a CSA/Hurricane upgrade.

● Commodore is working on an '030 machine, but we suspect it is too far in the future to be installed to protect the security of the US. Commodore has always spent a lot on research and development. Things which our sources know that they are experimenting on at the moment include dual ported video ram – which would increase the speed of screen accesses dramatically – and an 88000 machine.

As one of Motorola's best customers, Commodore has pre-production quantities of the new super-chip which uses Risc technology. The company is really taking on the big boys. Mini-maker Data General plans to launch an open architecture 88000 machine next year. All these will be horrifically expensive, but in five years we will see home computers we can now only dream about. Roll on the automated home. "Open the garage door HAL."

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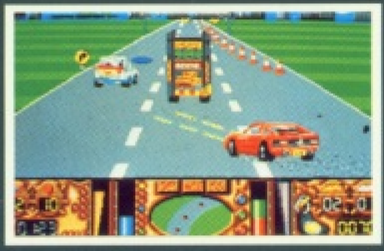
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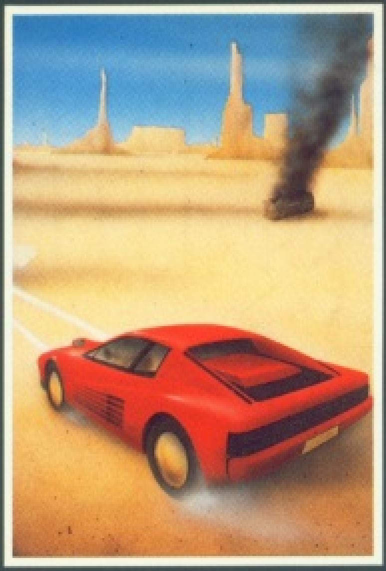


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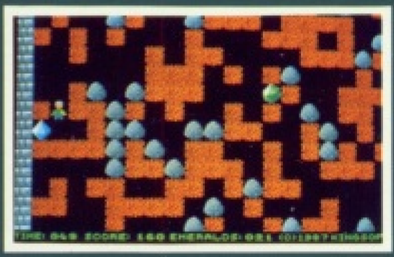


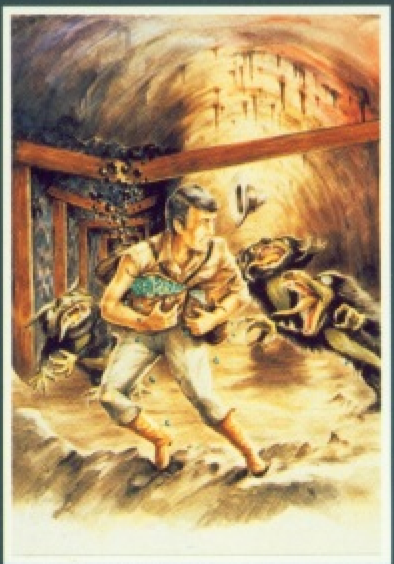
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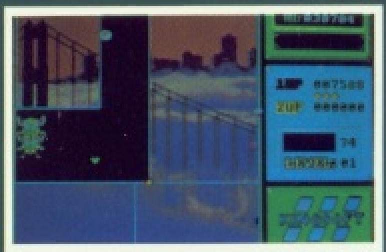
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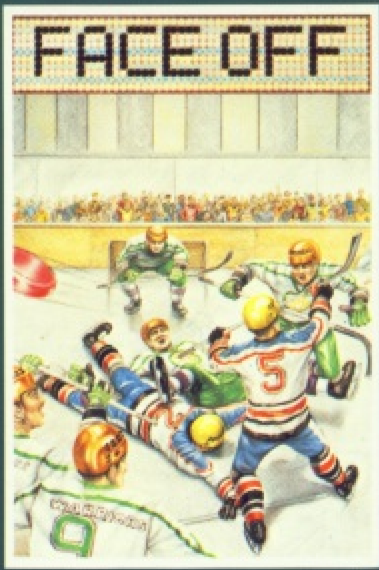


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